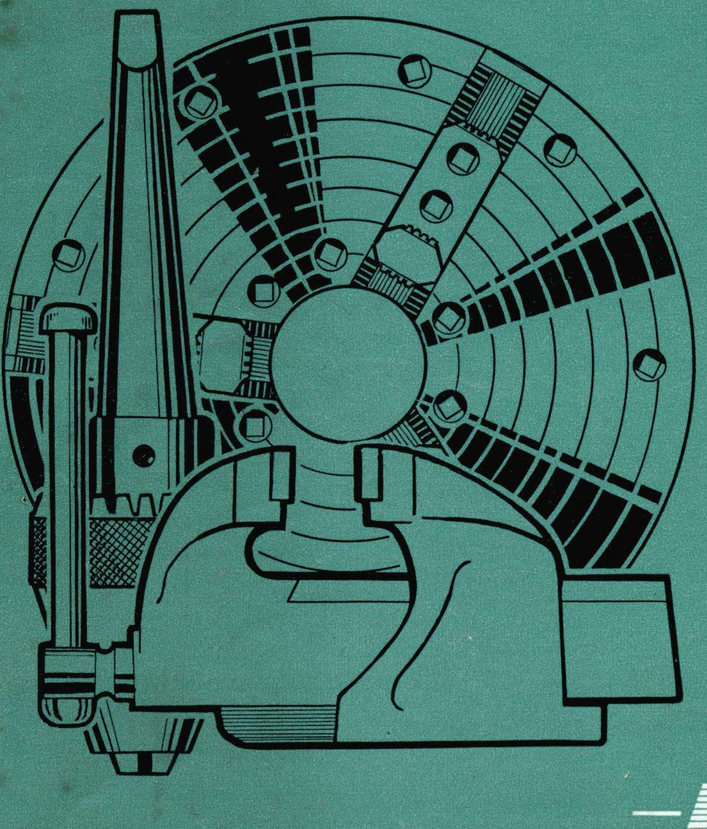
Chucks,
Vices and Work-Holding Fixtures



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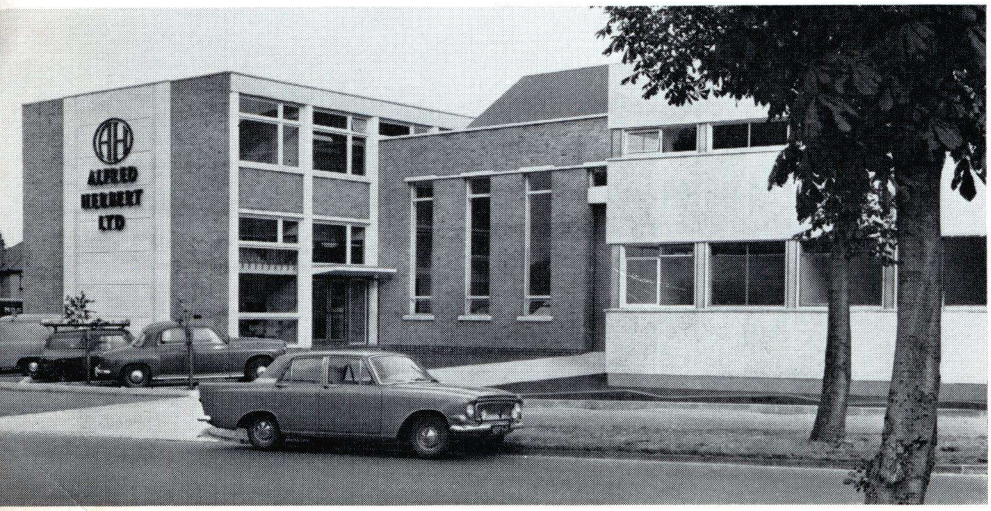
If the required tools or equipment are not on the shelves at the Branch Office, offices are in daily contact with their Head Office and have telex communications with other Branch warehouses, to still ensure prompt delivery, whenever possible.

A COMPLETE SMALL TOOL SERVICE



The new Birmingham Office of Alfred Herbert Ltd.

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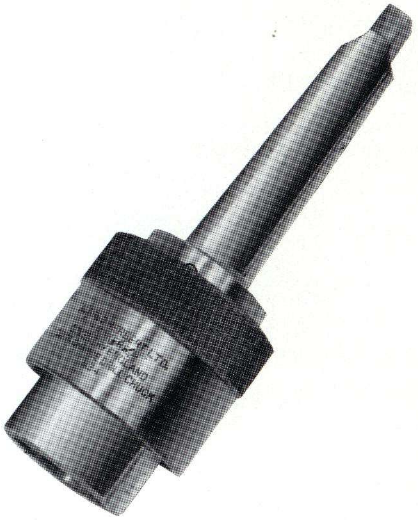
THIRD EDITION

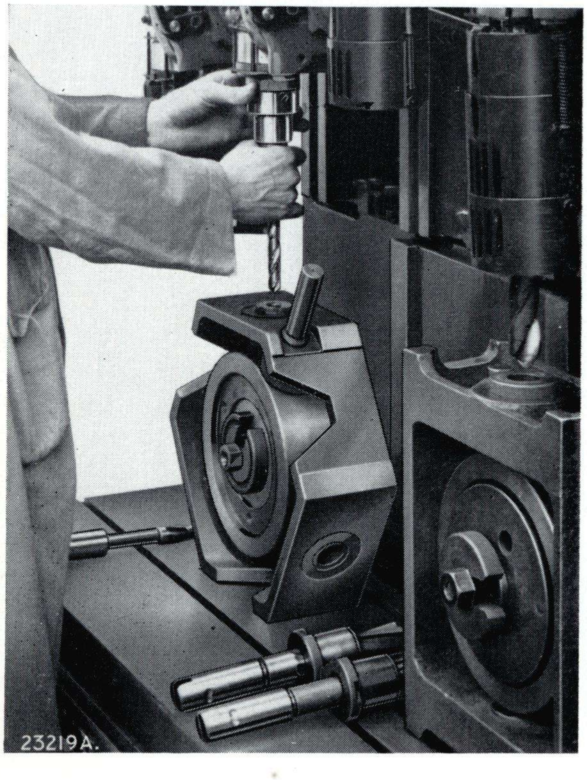
COVENTRY QUICK-CHANGE DRILL CHUCKS

This chuck enables drills and other tools with taper shanks to be inserted and removed without stopping the spindle on drilling machines with vertical, horizontal or inclined spindles. A single-spindle drilling machine can be used to perform a series of associated operations on components which normally would necessitate a multi-spindle machine.

Operation is entirely without the use of spanners or keys. Positive drive, which eliminates the possibility of slipping, is provided by balls which engage with the slots in the collet.

When the knurled collar is slid upwards, the balls disengage, releasing the collet which contains the tool. To insert a tool, the collet is pushed into the bore of the chuck and the knurled collar brought down, thus engaging the driving balls.





The No. 2 chuck can be supplied with collets having No. 1 or No. 2 Morse Taper bores, and the No. 3 chuck with collets bored No. 1, No. 2 or No. 3 M.T.

The No. 4 chuck can be supplied with No. 1, No. 2, No. 3 or No. 4 M.T. collets, and the No. 5 chuck with No. 2, No. 3, No. 4 or No. 5 M.T. collets.

An ejector can be supplied with all of these chucks.

When using drills or other tools with No. 1 M.T. shanks in a No. 5 chuck, standard Morse Taper sleeves must be used.

JACOBS INDUSTRIAL DRILL CHUCKS

PLAIN BEARING KEY-TYPE CHUCKS

These units provide maximum gripping power, accuracy and durability whether used on electric or pneumatic drills or drill presses. Supplied with either threaded or tapered hole mounts in a complete range of sizes.

Long working life is assured by carefully controlled manufacturing processes which guarantee part interchangeability. This factor facilitates the replacement of keys, jaws, nuts and sleeves. Spare parts are easily obtainable.

Sleeves, jaws and nuts are interchangeable between taper and thread mounted chucks which have the same model number. For example, 7, 7–1A and 7B.

In the following specifications, with the exception of the Model O chuck, which has a minimum capacity of a No. 80 drill, all medium and heavy duty chucks having a nominal capacity of zero will hold a No. 70 drill.

TAPER MOUNTED MODELS

Specifications :

MEDIUM-DUTY MODELS

Chuck Model	Capacity	Tapered Mount	Key Used	Length Closed	Length Open	Diameter
0	0″–5/32″	0JT	K0	1 3/8″	1 1/8″	7/8″
1A	0″–1/4″	1JT	K1	1 15/16″	1 17/32″	1 3/16″
2A	0″–3/8″	2JT	K2	2 13/16″	2 3/16″	1 11/16″
6AE	0″–1/2″	EJT	K3	3 1/2″	2 23/32″	1 15/16″
6A-2A	0″–1/2″	2JT	K3	3 7/16″	2 5/8″	1 15/16″
6A-33	0″–1/2″	33JT	K3	3 7/16″	2 5/8″	1 15/16″
33	5/64″–1/2″	33JT	K32	3 5/32″	2 17/32″	1 13/16″
3326	5/64″–1/2″	5/8″ dia. Str. Hole	K32	3 33/64″	2 7/8″	1 13/16″

HEAVY-DUTY MODELS

Chuck Model	Capacity	Tapered Mount	Key Used	Length Closed	Length Open	Diameter
7	0″–1/4″	2 short JT	K7	2 7/32″	1 25/32″	1 11/32″
7–1A	0″–1/4″	1 JT	K7	2 1/8″	1 21/32″	1 11/32″
30	0″–5/16″	2 short JT	K30	2 5/16″	1 29/32″	1 7/16″
30–1A	0″–5/16″	1 JT	K30	2 13/32″	1 29/32″	1 7/16″
32	0″–3/8″	2 JT	K32	2 31/32″	2 9/32″	1 13/16″
34	0″–1/2″	6 JT	K3	3 7/16″	2 11/16″	2 1/16″
3	0″–17/32″	3 JT	K3	3 13/16″	2 7/8″	2 5/16″
3A	1/8″–5/8″	3 JT	K3	3 13/16″	2 7/8″	2 5/16″
3AE	1/8″–5/8″	EJT	K3	3 13/16″	2 7/8″	2 5/16″
36	3/16″–3/4″	3 JT	K4	4 1/16″	3 5/32″	2 9/16″
36E	3/16″–3/4″	EJT	K4	4 1/16″	3 5/32″	2 9/16″

THREAD MOUNTED MODELS

Specifications:

MEDIUM-DUTY MODELS

Chuck Model	Capacity	Threaded Mount	Key Used	Length Closed	Length Open	Diameter
OB 5/16″–24	0″–5/32″	5/16″–24	K0	1 1/2″	1 3/16″	7/8″
1B 3/8″–24	0″–1/4″	3/8″–24	K1	1 15/16″	1 17/32″	1 3/16″
1B 5/16″–24	0″–1/4″	5/16″–24	K1	1 15/16″	1 17/32″	1 3/16″
2B 3/8″–24	0″–3/8″	3/8″–24	K2	2 13/16″	2 3/16″	1 11/16″
6B 1/2″–13	0″–1/2″	1/2″–13	K3	3 1/2″	2 23/32″	1 15/16″
6B 1/2″–20	0″–1/2″	1/2″–20	K3	3 1/2″	2 23/32″	1 15/16″
6B 1/2″–24	0″–1/2″	1/2″–24	K3	3 1/2″	2 23/32″	1 15/16″
33B 3/8″–24	5/64″–1/2″	3/8″–24	K32	3 3/32″	2 7/16″	1 13/16″
33B 1/2″–20	5/64″–1/2″	1/2″–20	K32	3 3/32″	2 7/16″	1 13/16″
33B 5/8″–16	5/64″–1/2″	5/8″–16	K32	3 3/32″	2 7/16″	1 13/16″

HEAVY-DUTY MODELS

Chuck Model	Capacity	Threaded Mount	Key Used	Length Closed	Length Open	Diameter
7B 3/8″–24	0″–1/4″	3/8″–24	K7	2 7/32″	1 23/32″	1 11/32″
7B 1/2″–20	0″–1/4″	1/2″–20	K7	2 7/32″	1 3/4″	1 11/32″
30B 3/8″–24	0″–5/16″	3/8″–24	K30	2 13/32″	1 29/32″	1 7/16″
30B 1/2″–20	0″–5/16″	1/2″–20	K30	2 13/32″	1 29/32″	1 7/16″
32B 1/2″–20	0″–3/8″	1/2″–20	K32	3	2 5/16″	1 13/16″
32B 5/8″–16	0″–3/8″	5/8″–16	K32	3	2 5/16″	1 13/16″
32B 45/64″–16	0″–3/8″	45/64″–16	K32	3	2 5/16″	1 13/16″
34B 5/8″–16	0″–1/2″	5/8″–16	K3	3 1/2″	2 3/4″	2 1/16″
34B 45/64″–16	0″–1/2″	45/64″–16	K3	3 1/2″	2 3/4″	2 1/16″
34B 3/4″–16	0″–1/2″	3/4″–16	K3	3 1/2	2 3/4″	2 1/16″
3B 5/8″–11	1/8″–5/8″	5/8″–11	K3	3 25/32″	2 27/32″	2 5/16″
3B 5/8″–16	1/8″–5/8″	5/8″–16	K3	3 13/16″	2 7/8″	2 5/16″
3B 45/64″–16	1/8″–5/8″	45/64″–16	K3	3 13/16″	2 7/8″	2 5/16″
3B 3/4″–16	1/8″–5/8″	3/4″–16	K3	3 13/16″	2 7/8″	2 5/16″
36B 5/8″–16	3/16″–3/4″	5/8″–16	K4	4 1/8″	3 7/32″	2 9/16″
36B 3/4″–16	3/16″–3/4″	3/4″–16	K4	4 1/8″	3 7/32″	2 9/16″

BALL BEARING SUPER CHUCKS, KEY TYPE

For extra heavy duty drilling, these chucks are renowned for their accuracy, gripping power and ruggedness. Mounted on taper or straight-shank arbors they can be employed on drilling machines both radial and pillar-type, milling machines and lathes. The ball thrust reduces friction and allows great gripping power.

The high-quality, alloy-steel nut and jaw assembly is hardened and ground, ensuring long working life under the most arduous conditions.

As with all Jacobs chucks, a comprehensive spare parts and maintenance service is available.

Specifications:

Chuck Model	Capacity	Tapered Mount	Key Used	Length Closed	Length Open	Diameter
8 1/2 N	0″–1/4″	2 short JT	K30	2 13/32″	1 7/8″	1 9/16″
11 N	0″–3/8″	2 JT	K32	2 7/8″	2 1/4″	1 15/16″
14 N	0″–1/2″	3 JT	K3	3 7/8″	2 31/32″	2 7/16″
16 N	1/8″–5/8″	3 JT	K4	4 1/4″	3 1/4″	2 5/8″
18 N	1/8″–3/4″	4 JT	K4	5 1/16″	3 31/32″	3
20 N	3/8″–1″	5 JT	K5	5 3/8″	4 1/4″	3 21/32″

ARBORS AND ADAPTORS FOR JACOBS DRILL CHUCKS

Tapered-back chucks have a bore which enables them to be mounted directly on the machine spindle, or to arbors or adaptors which in turn fit the spindle.

Threaded-back chucks are intended to thread directly to the spindle, no arbor being required. For special purposes, threaded arbors can be supplied as extras. Jacobs arbors feature a hardened tang which prevents damage by the drift when the chuck is being removed. The following table gives the various standard combinations of Jacobs Tapers having Morse Taper shanks. Brown & Sharpe Taper Arbors, Threaded Arbors, Straight Shank Arbors and Motor Shaft Adaptors can be produced to requirements.

TAPER SHANK ARBORS

Shank Taper	*Jacobs Tapers*
No. 0 Morse	0, 1, 2 and 33.
No. 1 Morse	0, 1, 2, 3, 4, 6 and 33.
No. 2 Morse	0, 1, 2, 3, 4, 5, 6 and 33.
No. 3 Morse	1, 2, 3, 4, 5, 6 and 33.
No. 4 Morse	1, 2, 3, 4, 5, 6 and 33.
No. 5 Morse	2, 3, 4, 5 and 6.

N.B.—Arbors with the No. 2 Jacobs Taper will be supplied for use with chucks having a No. 2 short Jacobs Taper Mounting hole.

All arbors not appearing in the above list are special, prices and delivery will be quoted upon application.

MARVEL KEYLESS DRILL CHUCKS

These chucks have a self-tightening grip in proportion to the cutting load. Wrenches, dogs or clamps are unnecessary and should not be used. Slipping is eliminated so that the drill shanks are not damaged.

The Marvel drill chuck has a robust external casing which provides complete protection for the jaws and internal mechanism. Spare parts are guaranteed interchangeable. The internal parts comprise a set of three jaws, a cone and a ball thrust, each of which is hardened and ground. No fine screws or springs are used in the construction.

To release the drill from the chuck, a sharp twist with the palm of the hand in the direction of rotation is all that is necessary.

A comprehensive maintenance service is available.

A Standard Chuck

STANDARD CHUCKS

Chuck No.	301	102	103	105	106
Capacity	0"–¼"	0"–⅜"	0"–½"	⅛"–⅝"	3/16"–¾"

MARVEL KEYLESS DRILL CHUCKS contd.

TURRET STYLE CHUCKS

Shanks made solid with the body give a short overhang for rigidity and accuracy of alignment. Tools can be quickly changed by hand without disturbing the chuck setting.

Chuck No.	171	172	203	163	205	166
Capacity	0"–¼"	0"–⅜"	0"–½"	0"–½"	⅛"–⅝"	3/16"–¾"
Shank Dia.	¾"	1"	1"	1½"	1"	1½"

ARBORS FOR MARVEL KEYLESS DRILL CHUCKS

Hardened and ground Arbors are available in all Morse Taper or Parallel Shanks. Arbors for Jacobs Series Taper Bores can also be supplied.

Available with Morse Taper Shanks from No. 1 to No. 5, the size of the shank and the number of the chuck for which the arbor is required must be stated when ordering.

Turret Style Chuck

Arbor for Marvel Keyless Drill Chuck

BLANK END ARBORS

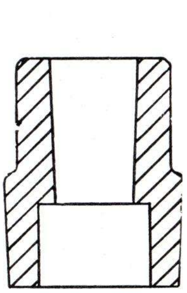
Size of Morse Taper Shank	*Details of Blank End*
No. 1 M.T.	¾" dia. × 1⅛" long.
No. 2 M.T.	⅞" dia. × 1¼" long.
No. 3 M.T.	1" dia. × 1½" long.
No. 4 M.T.	1⅜"dia. × 1¾" long.

ADAPTORS

To mount standard chucks directly to the solid end of the machine spindle, special adaptors for converting the existing taper bore into a Jacobs series Taper bore, can be supplied.

This does not apply to Chuck No. 301, which has a No. 2 Jacobs Taper Bore.

The size or number of the chuck and also the Jacobs Taper for which the adaptors are intended should be stated when ordering.



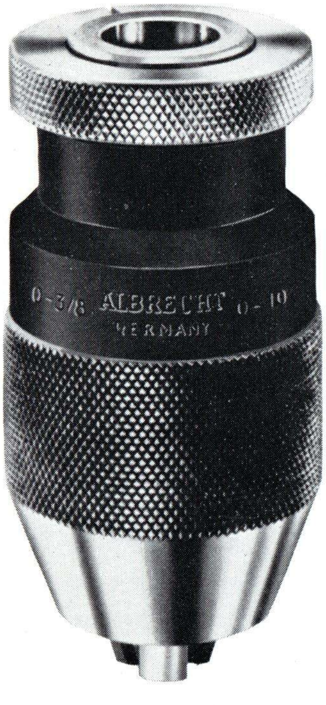
Adaptor

ALBRECHT KEYLESS DRILL CHUCKS

A keyless chuck is often more suitable than the conventional key type, for applications necessitating constant changing of drill size. Enables changes to be made quickly and by hand, but still gives firm slip-free grip. They are hand-locking and self-tightening.

Every chuck is precision made to give operational accuracy beyond normal demands. Although in some applications this extreme accuracy is not an essential requirement, the resulting smooth and concentric running ensures that no strain is imparted to the machine spindle. Manufactured to very close tolerances, carefully controlled heat treated and precision ground.

Model 15 JO—graduated in mm. to assist the correct location of small drills



Heavy Duty Chuck

Almost every part of the chuck, both internal and external, is of high-quality, hardened and ground steel, a factor which contributes to great accuracy and long life.

Long double bearing surfaces ensure minimum run-out and ball bearings are sealed against the ingress of foreign matter. There are no springs or keys, and the knurled collar facilitates opening and closing.

Model 15 JO has a minimum capacity of ·008″ and is designed for use on small, high speed drill presses. All other models having a nominal capacity of zero will hold a No. 80 drill.

Spare parts are available for all models.

Specifications overleaf.

THREAD MOUNTED CHUCKS

Chuck Model	*Chuck Capacity*	*Mount*	*Diameter*	*Length*		*Weight*
				Open	*Closed*	*lbs. ozs.*
65T 3/8″–24	0″–1/4″	3/8″–24	1 11/32″	2 7/16″	2 11/16″	0—10 1/4
65T 1/2″–20	0″–1/4″	1/2″–20	1 11/32″	2 7/16″	2 11/16″	0—10 1/4
80T 1/2″–20	0″–5/16″	1/2″–20	1 1/2″	2 23/32″	3 1/16″	0—14 3/4
100T 1/2″–20	0″–3/8″	1/2″–20	1 11/16″	3 5/32″	3 19/32″	1— 5 1/2
100T 5/8″–16	0″–3/8″	5/8″–16	1 11/16″	3 5/32″	3 19/32″	1— 5 1/2
130T 5/8″–16	1/32″–1/2″	5/8″–16	1 31/32″	3 9/16″	4 1/16″	2— 1 1/4
130T 3/4″–16	1/32″–1/2″	3/4″–16	1 31/32″	3 9/16″	4 1/16″	2— 1 1/4
160T 3/4″–16	1/8″–5/8″	3/4″–16	2 7/32″	3 3/4″	4 9/32″	2—12

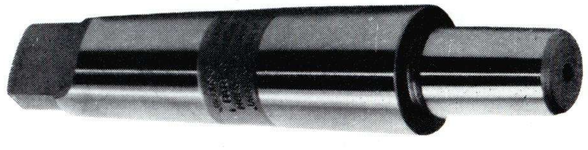
TAPER MOUNTED CHUCKS

Chuck Model No.	*Chuck Capacity*	*Jacobs Taper Bore*	*Diameter*	*Length*		*Weight*
				Open	*Closed*	*lbs. ozs.*
15 JO	0″–1/16″	OJT	3/4″	1 15/32″	1 15/32″	0—1 3/4
30 JO	0″–1/8″	OJT	15/16″	1 47/64″	1 7/8″	0—3 1/2
30 J1	0″–1/8″	IJT	15/16″	1 47/64″	1 7/8″	0—3 1/2
50 J1	0″–3/16″	IJT	1 3/16″	2 7/32″	2 7/16″	0—7
65 J1	0″–1/4″	IJT	1 11/32″	2 7/16″	2 11/16″	0—10 1/4
80 J2	0″–5/16″	2 short JT	1 1/2″	2 23/32″	3 1/16″	0—14 3/4
100 J33	0″–3/8″	33 JT	1 11/16″	3 5/32″	3 19/32″	1—5 1/2
100 J2	0″–3/8″	2 JT	1 11/16″	3 5/32″	3 19/32″	1—5 1/2
130 J33	1/32″–1/2″	33 JT	1 31/32″	3 9/16″	4 1/16″	2—1 1/4
130 J2	1/32″–1/2″	2 JT	1 31/32″	3 9/16″	4 1/16″	2—1 1/4
130 J6	1/32″–1/2″	6 JT	1 31/32″	3 9/16″	4 1/16″	2—1 1/4
160 J6	1/8″–5/8″	6 JT	2 7/32″	3 3/4″	4 9/32″	2—12

ARBORS

Jacobs Arbors to fit the Albrecht Chuck have a hardened tang to prevent damage when ejecting. Fine limits of accuracy are adhered to in manufacture and only the highest quality materials are used.

When ordering, the size of the Morse Taper Shank and the model number of the chuck for which the arbor is required must be stated.



GRONKVIST SELF-CENTRING DRILL CHUCKS

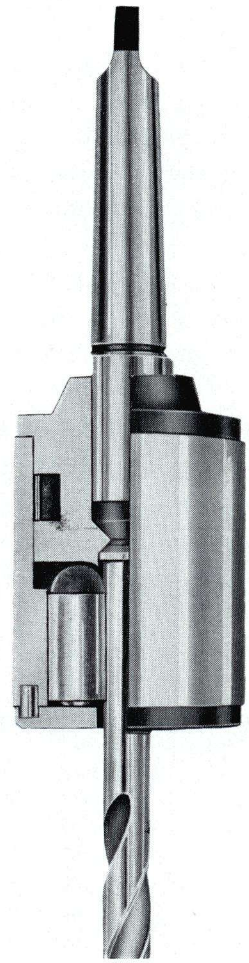
A rapid change ensures increase in production.

The precise drill-centring action ensures each drill size is gripped tightly; parts are not subjected to heavy wear.

The chuck body is enclosed in a sleeve on the inner surface of which are three, very accurately, broached, eccentric flutes. These govern the position of the hardened and ground, steel, gripping-rollers. Spring tension on the sleeve turns it, so that the rollers grip the tool through slots in the chuck body.

To change tools whilst the chuck is in motion, grip the chuck loosely in the hand so that it slows down: this neutralizes the spring pressure, the tool drops out, and another can be inserted. As the drill begins to work, the torque drives the rollers around onto the high spots on the sleeve flutes. Thus, the greater the drilling torque, the more tightly the chuck grips.

In addition to the range listed below, left-hand chucks can be supplied.



Specifications:

Size	*Capacity*	*Diameter*	*Length*	*Weight*		*Morse Taper Arbors*
				lbs.	*ozs.*	
0	1/32"–5/64"	7/8"	1 29/64"		3	Nos. 1 and 2
1	5/64"–11/64"	1 3/8"	2 3/64"		6 1/2	Nos. 1, 2 and 3
2	11/64"–5/16"	1 11/16"	2 19/32"	1	7	Nos. 1, 2, 3 and 4
3	5/16"–1/2"	2 13/64"	3 17/64"	2	10	Nos. 1, 2, 3 and 4
4	1/2"–3/4"	2 51/64"	3 57/64"	4	14	Nos. 2, 3 and 4

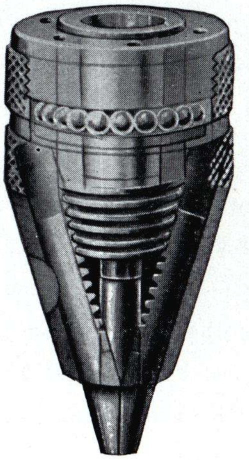
CARDINAL MARK I DRILL CHUCKS

Although tommy-bars and keys are provided with the keyless and keytype chucks of this range, a simple hand tightening ensures that the jaw-grip will adjust itself to the requisite load. An immensely strong grip results from the pull of the twist drill, positively preventing slipping and subsequent damage to tools. This grip usually requires the tommy-bar or key to unlock.

Concentricity is excellent and is not impaired by constant, heavy-duty service. The chuck has a long working life. A comprehensive Spare Parts Service is available.

The Taper-Nose design permits maximum tool visibility when working in confined conditions.

Cardinal Mark 1 Drill Chucks are not designed for use on portable tools. The locking action is ideal, but the weight is usually considered excessive for hand use.



3-Jaw Keyless Type

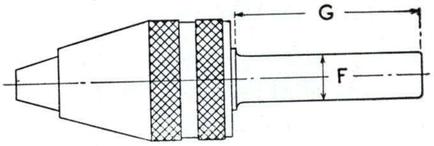
3-JAW KEYLESS MODELS—TAPER SHANK MOUNTED

Model No.	Capacity	Shank Size	Diameter	Body Length (Jaws retracted)	Weight lbs. ozs.
60	0"–3/16"	No. 1 M.T.	1 5/32"	1 7/8"	0— 8 1/2
61	0"–1/4"	No. 1 M.T.	1 11/32"	2 5/32"	0—10 3/4
62	0"–1/4"	No. 2 M.T.	1 11/32"	2 5/32"	0—13 3/4
63	0"–5/16"	No. 1 M.T.	1 17/32"	2 9/16"	0—15
64	0"–5/16"	No. 2 M.T.	1 17/32"	2 9/16"	1— 2
65	0"–3/8"	No. 1 M.T.	1 15/16"	2 15/16"	1—11
66	0"–3/8"	No. 2 M.T.	1 15/16"	2 15/16"	1—14
67	0"–1/2"	No. 1 M.T.	2 1/4"	3 7/16"	2—11
68	0"–1/2"	No. 2 M.T.	2 1/4"	3 7/16"	2—14
69	0"–1/2"	No. 3 M.T.	2 1/4"	3 7/16"	3— 3

3-JAW KEYLESS MODELS—TAPER HOLE MOUNTED

Model No.	Capacity	Taper Hole Series No.	Fitting Depth of taper hole	Weight lbs. ozs.
80	0"–3/16"	1	9/16"	0— 5 1/2
81	0"–1/4"	2 short	3/4"	0— 8
82	0"–5/16"	2 short	3/4"	0—12
83	0"–3/8"	2	7/8"	1— 8
84	0"–1/2"	6	1"	2— 7

3-JAW KEYLESS—PARALLEL SHANK MODELS



These models are specially recommended for use on Automatic Lathes. The dimension F max. represents the largest diameter of integral shaft that can be supplied to special order.

Model No.	*Capacity*	*F*	*G*	*F Maximum*
101	0"–1/4"	7/16"	2 1/2"	3/4"
102	0"–5/16"	7/16"	2 1/2"	13/16"
103	0"–3/8"	3/4"	3"	1"
104	0"–1/2"	1"	4"	1 1/8"

SPECIAL 3-JAW KEYLESS MODELS

In addition to the models listed, several ranges of less demanded models are manufactured:—

THREADED HOLE MOUNTED MODELS

Model No.	90	91	92	93	94
Capacity	3/16"	1/4"	5/16"	3/8"	1/2"

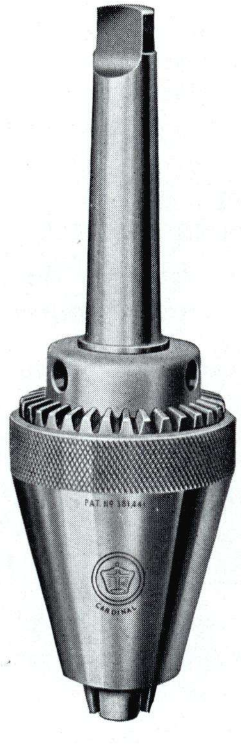
TAPER HOLE MOUNTED MODELS WITH EXTRA KNURLED RING*

Model No.	130	131	132	133	134
Capacity	3/16"	1/4"	5/16"	3/8"	1/2"

THREADED HOLE MOUNTED MODELS WITH EXTRA KNURLED RING*

Model No.	140	141	142	143	144
Capacity	3/16"	1/4"	5/16"	3/8"	1/2"

*These chucks are for use on portable drills of the very compact type. The upper knurled ring is a means of arresting the movement of the internal operating cone when locking or unlocking, so that the chuck will remain firmly fixed on its arbor.



3-Jaw Keytype Model

3-JAW KEYTYPE MODELS—TAPER SHANK MOUNTED

Model No.	*Capacity*	*Shank Size*	*Diameter*	*Body Length (Jaws retracted)*	*Weight lbs. ozs.*
1	0"–1/4"	No. 1 M.T.	1 11/32"	2 1/4"	0— 9
2	0"–5/16"	No. 1 M.T.	1 17/32"	2 1/2"	0—13
3	0"–3/8"	No. 2 M.T.	1 15/16"	2 15/16"	1—10
3A	0"–3/8"	No. 1 M.T.	1 15/16"	2 15/16"	1— 7
4	0"–1/2"	No. 2 M.T.	2 1/4"	3 7/16"	2— 4
4A	0"–1/2"	No. 1 M.T.	2 1/4"	3 7/16"	2— 1
5	1/8"–5/8"	No. 2 M.T.	2 1/2"	3 9/16"	2—14
5A	1/8"–5/8"	No. 3 M.T.	2 1/2"	3 9/16"	3— 4
6	3/16"–3/4"	No. 3 M.T.	2 3/4"	4 1/16"	4— 2
6A	3/16"–3/4"	No. 2 M.T.	2 3/4"	4 1/16"	3—12

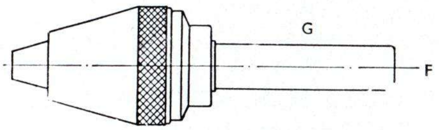
3-JAW KEYTYPE MODELS—TAPER HOLE MOUNTED

Some of these models have special tapers to suit the spindles of certain HERBERT sensitive drilling machines

Model No.	*Capacity*	*Top dia. of Hole × Taper per Foot*	*Taper Hole Series No.*	*Weight lbs. ozs.*
21	0"–¼"	·406" × ·978"	Special	7
23	0"–⅜"	·531" × ·978"	Special	1— 5
24	0"–½"	·559" × ·978"	2	1—14
25	0"–⅝"	·687" × ·978"	Special	2— 8
25A	0"–⅝"	·811" × ·639"	3	2— 8
26	0"–¾"	·812" × ·978"	Special	3— 6
26A	0"–¾"	·811" × ·639"	3	3— 6

3-JAW KEYTYPE—PARALLEL SHANK MODELS

These two models supplement the Keyless Parallel Shank Models and are for the same application



Model No.	*Capacity*	*F*	*G*	*F Maximum*
55	⅛"–⅝"	¾"	3"	15/16"
56	3/16"–¾"	1"	4"	1⅛"

F. Max. is the maximum diameter of integral shaft that can be supplied to special order.

CARDINAL MARK II DRILL CHUCKS

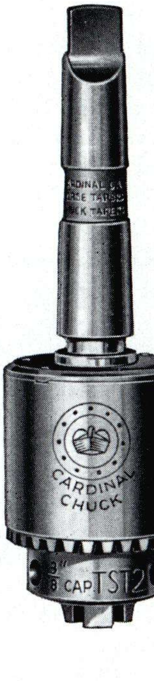
A comprehensive range of light to medium weight chucks for general engineering, and the portable electric tool trade.

The form and pitch of the jaw-carrier and sleeve threads are carefully selected to give a smooth, slow locking action and tremendous holding power.

All Cardinal Chucks are tested for concentricity, and the limits of accuracy guaranteed in this respect are superior to those recommended in BS.1983:1953. To obtain maximum concentricity and grip from key-operated chucks, the key should be used in all three hole positions—the procedure being similar to that followed when locking a lathe chuck. All Cardinal Mark II Drill Chucks are key-operated.

Outer sleeves, jaws, jaw-carrier nuts and lock-rings are easily replaceable. When ordering spare parts, the full marking on the lock-ring should be quoted.

Mark II



TAPER HOLE MOUNTED MODELS

Chuck No.	*Capacity*	*Type*	*Taper Hole Series No.*	*Sleeve Dia.*	*Weight lbs.*	*ozs.*
QXLT.1	0″–¼″	L.D.	1	1·180″		4½
QHD.1	0″–¼″	H.D.	1	1·5″		9½
QHD.2	0″–¼″	H.D.	2 Short	1·5″		9½
FST.2	0″–⁵⁄₁₆″	Std.	2 Short	1·5″		9½
TST.2	0″–⅜″	Std.	2	1·75″		14½
HLT.33	⁵⁄₆₄″–½″	L.D.	33	1·836″	1—	0
HST.2	0″–½″	Std.	2	2·125″	1—	9
HST.3	0″–½″	Std.	3	2·125″	1—	9
HST.6	0″–½″	Std.	6	2·125″	1—	9
HST.33	0″–½″	Std.	33	2·125″	1—	9

THREADED HOLE MOUNTED MODELS

Chuck No.	*Capacity*	*Type*	*Thread*	*Thread Length*	*Dia. of Sleeve*	*Weight lbs.*	*ozs.*
QXLS.3824	0″–¼″	L.D.	⅜″ × 24	⁹⁄₁₆″	1·180″		4½
QSS.1220	0″–¼″	Std.	½″ × 20	⁹⁄₁₆″	1·375″		7
QHD.3824	0″–¼″	H.D.	⅜″ × 24	⁹⁄₁₆″	1·5″		9½
QHD.1220	0″–¼″	H.D.	½″ × 20	⁹⁄₁₆″	1·5″		9½
FSS.3824	0″–⁵⁄₁₆″	Std.	⅜″ × 24	⁹⁄₁₆″	1·5″		9½
FSS.1220	0″–⁵⁄₁₆″	Std.	½″ × 20	⁹⁄₁₆″	1·5″		9½
TSS.1220	0″–⅜″	Std.	½″ × 20	⁹⁄₁₆″	1·75″		14½
HLS.1220	⁵⁄₆₄″–½″	L.D.	½″ × 20	⁹⁄₁₆″	1·836	1—	0
HSS.1220	0″–½″	Std.	½″ × 20	⁹⁄₁₆″	2·125″	1—	9
HSS.4564	0″–½″	Std.	⁴⁵⁄₆₄″ × 16	¹¹⁄₁₆″	2·125″	1—	9

SPECIAL MODELS

Chuck No.	*Capacity*	*Type*	*Thread*	*Thread Length*	*Dia. of Sleeve*	*Weight lbs.*	*ozs.*
TSS.5816	0″–⅜″	Std.	⅝″ × 16	¹¹⁄₁₆″	1·75″		14½
HLS.5816	⁵⁄₆₄″–½″	L.D.	⅝″ × 16	¹¹⁄₁₆″	1·836″	1—	0
HSS.5816	0″–½″	Std.	⅝″ × 16	¹¹⁄₁₆″	2·125″	1—	9
HSS.3416	0″–½″	Std.	¾″ × 16	¹¹⁄₁₆″	2·125″	1—	9

These models are designed to suit the thread on certain types of electric drills.

ARBORS FOR CARDINAL DRILL CHUCKS

TAPER HOLE ARBORS

To Fit Taper Hole	*Morse Taper or Straight Shank*	*Code No.*	*To Fit Mark II Chucks Nos.*	*To Fit Mark I Chucks Nos.*
No. 1	No. 1 M.T.	CA 1	QXLT 1: QHD 1	No. 80
	No. 2 M.T.	CA 2	and FST 1	
No. 2	No. 1 M.T.	CA 3	QHD 2: FST 2	
	No. 2 M.T.	CA 4		No. 81: No. 82
	No. 3 M.T.	CA 5	TST 2	
	½″ × 3″ SS	CA18		
	¾″ × 3″ SS	CA18B	HST 2	No. 83 : No. 24
No. 3	No. 1 M.T.	CA 6		
	No. 2 M.T.	CA 7		No. 25A
	No. 3 M.T.	CA 8	HST 3	
	No. 4 M.T.	CA22		No. 26A
	1″ × 4″ SS	CA19		
No. 6	No. 1 M.T.	CA 9		
	No. 2 M.T.	CA10		
	No. 3 M.T.	CA11		
	½″ × 4″ SS	CA20	HST 6	No. 84
	¾″ × 3″ SS	CA26		
	1″ × 4″ SS	CA16		
	1″ × 3″ SS	CA16B		
No. 33	No. 1 M.T.	CA12	HLT 33	
	No. 2 M.T.	CA13	HST 33	
	No. 3 M.T.	CA14		
Special	No. 1 M.T.	CA50		No. 21

THREADED HOLE ARBORS

To Fit Screwed Hole	*Morse Taper*	*Code No.*	*Fits Cardinal Mark II Chucks Nos.*
⅜″ × 24 T.P.I.	No. 1 M.T.	CA23	QXLS 3824: QHD 3824:
	No. 2 M.T.	CA24	FSS 3824
½″ × 20 T.P.I.	No. 1 M.T.	CA27	QSS 1220: FSS 1220:
	No. 2 M.T.	CA17	TSS 1220: HSS 1220:
			HLS 1220
⅝″ × 16 T.P.I.	No. 2 M.T.	CA15	TSS 5816: HLS 5816:
	No. 3 M.T.	CA25	HSS 5816
45/64″ × 16 T.P.I.	No. 2 M.T.	CA21	HSS 4564
	No. 3 M.T.	CA28	
¾″ × 16 T.P.I.	No. 2 M.T.	CA29	HSS 3416

COVENTRY CONCENTRIC CHUCKS

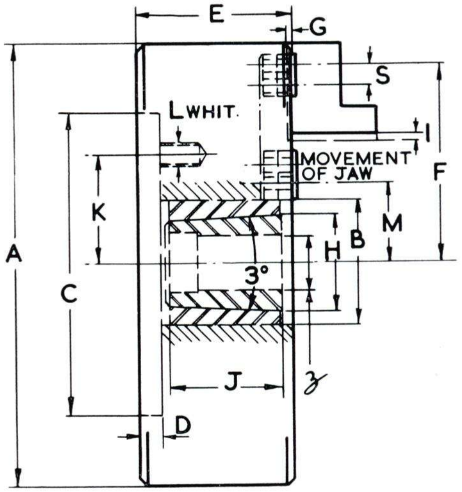
The quality of a lathe chuck has vital bearing on the efficiency of the machine, and the quality of Coventry Concentric Chucks is indicated by the fact that leading lathe manufacturers supply them as a standard accessory to their machines. Renowned to be the strongest chuck made, these chucks can exert enormous gripping power, which qualities are supplemented by a remarkable degree of durability, accuracy and adaptability.

Strength and durability are derived from the high quality of materials used in manufacture and the absence of jaw slots in the chuck periphery. Great gripping power is obtained by high ratio gearing and efficient scroll design.

All parts are machined to fine limits ensuring freedom from wear and maintenance of running truth.

The adaptability of Coventry Concentric Chucks is outstanding, as they will deal with all concentric work and most types of irregular work. Special jaws are easily accommodated, and the removal of the jaws enables the chuck to be used as a face plate.

Available in ten sizes of three-jaw chucks 6″, 7½″, 9″, 12″, 15″, 18″ 21″, 25″, 28″ and 32″, and two sizes, 6″ and 9″ of two-jaw chucks.



Specifications:

Size of Chuck	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*Z†*
6″	6″	1 5/16″	5¼″	3/16″	2 5/16″	2 9/16″	1/16″	15/16″	3/16″	1⅞″	2 11/32″	3″—⅜″	29/32″	½″
7½″	7½″	1 11/16″	5¼″	3/16″	2 21/64″	3⅛″	1/16″	1¼″	3/16″	1⅞″	2 11/32″	3″—⅜″	1 7/16″	⅝″
9″	9½″	2 9/16″	7½″	5/16″	3 5/16″	4 1/16″	1/16″	2 3/16″	5/32″	2¾″	3⅛″	3″—½″	1 9/16″	1⅛″
12″	12½″	3¾″	7½″	½″	3 7/16″	5⅜″	1/16″	3 1/16″	3/16″	2 11/16″	3⅛″	3″—½″	2¼″	1½″
15″	15½″	4¾″	10″	⅝″	4⅛″	6¾″	3/32″	3¾″	¼″	3¼″	4″	4″—¾″	2 13/16″	1½″
18″	18¾″	5½″	10″	13/16″	4 9/16″	8⅛″	3/32″	4½″	¼″	3½″	4″	4″—¾″	3⅜″	1½″
18″	18¾″	5½″	14¼″	¾″	5 9/16″	8⅛″	3/32″	4½″	¼″	3½″	6 1/16″	6″—⅞″	3⅜″	1½″
21″	21¾″	6¼″	14¼″	⅞″	5¼″	9½″	3/32″	5″	¼″	4″	6 1/16″	6″—⅞″	3 13/16″	2⅛″
25″	25″	7 5/16″	14¼″	⅞″	5¼″	10¾″	3/32″	5¾″	¼″	4″	6 1/16″	6″—⅞″	4 3/16″	2⅛″
28″	28″	8 9/16″	14¼″	⅞″	5¼″	11⅝″	3/32″	7¼″	¼″	4″	6 1/16″	6″—⅞″	5 3/16″	3¼″
28″	28″	8 9/16″	16″	⅞″	5¼″	11⅝″	3/32″	7¼″	¼″	4″	6⅞″	6″—1″	5 3/16″	3¼″
32″	32″	8¾″	14¼″	1¼″	7 5/16″	13⅛″	3/32″	7¼″	5/16″	5″	6 1/16″	6″—⅞″	6⅛″*	3¼″
32″	32″	8¾″	16″	1 11/16″	7 5/16″	13⅛″	3/32″	7¼″	5/16″	5″	6⅞″	6″—1″	6⅛″*	3¼″
32″	32″	8¾″	19″	1 11/16″	7 5/16″	13⅛″	3/32″	7¼″	5/16″	5″	8⅜″	6″—1″	6⅛″*	3¼″

* *With Chuck Liner removed M = 5″*

†*Diameter of Bore in Steady Bushes. Special Bushes with Non-standard Bores can be supplied.*

COVENTRY CONCENTRIC CHUCKS contd.

LINERS AND STEADY BUSHES

When long or heavy boring operations are necessary and the work is held in a Coventry Chuck, boring bars can be piloted by fitting a liner and steady bush in the chuck.

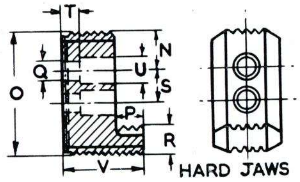
COVENTRY CHUCK JAWS

Three types of standard jaws are available for a variety of work as follows:—

Reversible hard jaws for ordinary chuck work, can be reversed to grip internally or externally.

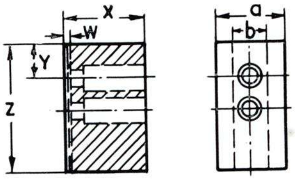
Bar jaws; for gripping bars

Soft jaws; blanks to be machined in position on the chuck.

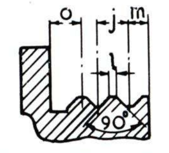


HARD JAWS

6″, 7½″, 9″ & 12″ CHUCKS HAVE JAWS WITH STRAIGHT GRIPPING FACES.

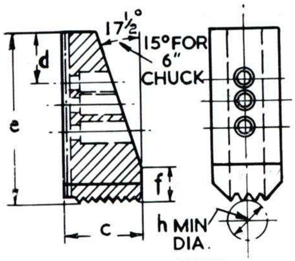


SOFT JAWS

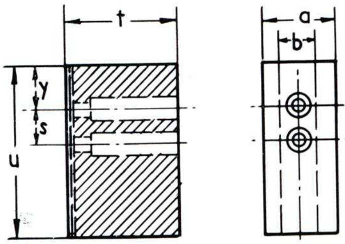


ENLARGED VIEW OF SERRATIONS

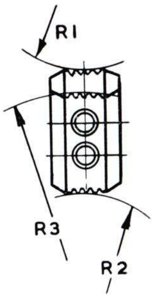
Size of Chuck	R_1	R_2	R_3
15″	2 1/2″	3 1/2″	6 3/8″
18″	3″	4″	7 3/16″
21″	2 1/2″	3 1/8″	7 1/8″
25″	3 1/2″	4 1/2″	9 3/8″
28″	3 1/2″	4 1/2″	9 3/8″
32″	3 1/2″	4 1/2″	11 3/4″



BAR JAWS



SPECIAL SOFT JAWS



Soft Jaws for 6″ & 9″ 2-Jaw Chucks only.

Size of Chuck	W	X	Y	Z	a	b
6″	1/8″	1 15/64″	5/8″	2 1/8″	2″	·502″ ·500″
9″	5/32″	1 3/4″	13/16″	2 3/4″	3″	·627″ ·625″

HARD JAWS

Size of Chuck	N	O	P	Q	R	S	T	U	V	j	l	m	o
6″	13/32″	1 3/4″	3/8″	21/64″	13/32″	1/2″	23/64″	9/16″	1 7/64″	1/8″	·030″—·020″	3/32″	3/32″
7 1/2″	13/32″	1 3/4″	3/8″	21/64″	13/32″	1/2″	23/64″	9/16″	1 7/64″	1/8″	·030″—·020″	3/32″	3/32″
9″	11/16″	2 5/16″	1/2″	15/32″	5/8″	5/8	9/16″	11/16″	1 9/16″	5/32″	·030″—·020″	1/8″	9/64″
12″	23/32″	2 7/8″	3/4″	17/32″	3/4″	29/32″	17/32″	3/4″	1 7/8″	3/16″	·030″—·020″	5/32″	5/32″
15″	29/32″	3 11/16″	13/16″	21/32″	13/16″	1 3/16″	11/16″	1″	2 3/16″	7/32″	3/64″	7/32″	1/4″
18″	1 5/64″	4 7/32″	7/8″	25/32″	1″	1 3/8″	3/4″	1 3/16″	2 7/16″	1/4″	5/64″	7/32″	5/16″
21″	1 9/16″	5 3/16″	1″	25/32″	1 3/16″	1 5/8″	27/32″	1 3/16″	2 11/16″	5/16″	3/64″	1/4″	1/4″
25″	1 19/32″	6 9/32″	1 1/8″	25/32″	1 13/32″	2 1/8″	27/32″	1 3/16″	2 15/16″	9/32″	1/8″	7/32″	1/4″
28″	1 7/8″	6 1/2″	1 1/8″	25/32″	1 13/32″	2 3/8″	27/32″	1 3/16″	2 15/16″	9/32″	1/8″	7/32″	13/64″
32″	1 27/32″	7 7/15″	1 1/2″	1 1/32″	1 9/16″	2 5/8″	1 1/8″	1 11/16″	3 5/8″	9/32″	1/8″	7/32″	9/32″

SOFT JAWS

W	X	Y	Z	a	b
1/8″	1 15/64″	5/8″	2 1/8″	·990″—·988″	·502″—·500″
1/8″	1 15/64″	5/8″	2 1/8″	·990″—·988″	·502″—·500″
5/32″	1 3/4″	13/16″	2 3/4″	1 5/16″	·627″—·625″
5/32″	2″	3/4″	3″	1 1/2″	·689″—·687″
5/32″	2 1/4″	1″	3 3/4″	1 3/4″	·815″—·812″
3/16″	2 1/2″	1 1/16″	4 1/4″	2 1/8″	1·003″—1·001″
1/4″	3″	1 11/16″	5 3/8″	2 1/4″	1·003″—1·001″
1/4″	3 1/4″	1 5/8″	6 1/4″	2 1/4″	1·003″—1·001″
1/4″	3 1/4″	1 5/8″	6 3/4″	2 1/4″	1·003″—1·001″
3/8″	4″	1 7/8″	7 3/4″	2 7/8″	1·253″—1·251″

BAR JAWS

c	d	e	f	h
1 1/8″	11/16″	2 5/16″	7/8″	5/16″
1 1/8″	11/16″	2 5/16″	7/8″	13/16″
1 9/16″	1 1/8″	3 19/64″	1/2″	3/8″
1 13/16″	1 7/32″	4 9/32″	7/16″	1/2″
2 7/32″	1 11/32″	5 19/64″	1/2″	5/8″
2 19/32″	1 27/64″	6 5/16″	9/16″	3/4″
3 7/64″	2 1/4″	7 11/32″	9/16″	7/8″
3 5/8″	2 5/32″	7 59/64″	15/16″	1 1/4″
3 5/8″	2 5/32″	8 11/16″	1 7/8″	2″
4 1/2″	2″	9 1/4″	1 1/8″	3 3/16″*

SPECIAL SOFT JAWS

t	u
2″	2 3/4″
2″	2 3/4″
2 3/4″	3 1/4″
3″	4″
3 1/4″	4 3/4″
3 1/2″	5 1/2″
4 1/4″	6 3/4″
4 3/4″	7 1/2″
—	—
—	—

* *With Chuck Liner Removed h = 1 1/2″.*

For further details of Coventry Concentric Chucks and Jaws, ask for Catalogue Y:1735

HERBERT AIR-OPERATED CHUCKS

Air-operated chucks reduce non-cutting times and eliminate operator fatigue, thereby effecting considerable savings on small or large batch work.

Chucks are designed to be operated by their appropriate cylinders working on a pressure of 80 lbs. per square inch. This has proved successful on the heaviest applications. Pressure can be automatically varied to grip frail work without distortion.

Nine sizes of three-jaw chuck 6″, 7½″, 9″, 12″, 15″, 18″ 21″, 25″ and 28″ diameter. Sizes 6″, 7½ and 9″, chucks are also supplied with two jaws.

The 6″ and 7½″ two- and three-jaw, and the 9″ three-jaw chucks have steel bodies and sector plates. Other sizes are of best quality cast-iron.

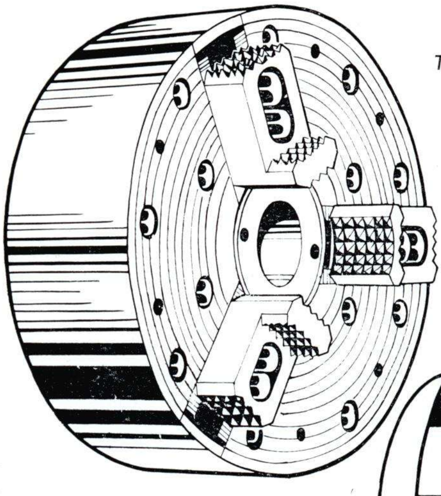
A bronze pilot bush is supplied with each chuck for supporting the end of boring bars. Bushes can be supplied bored to any diameter up to the maximum shown on the chart on page 19, which gives detailed specifications of Air-operated chucks.

TYPE 'L' TWO-JAW AIR CHUCK

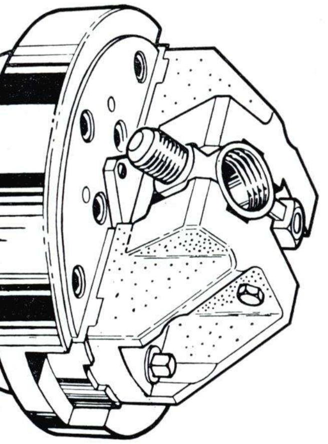
This chuck, which is equipped with soft jaws, is designed for work requiring a large jaw movement. The jaw carriers are cross-tenoned to locate the soft jaws. The movement of each jaw is equal to the piston movement in the air cylinder. This is a very desirable feature in the brass trade where the shape of components such as pipe unions makes a large jaw movement imperative.

For specifications of Type 'L' Air Chucks see page 20.

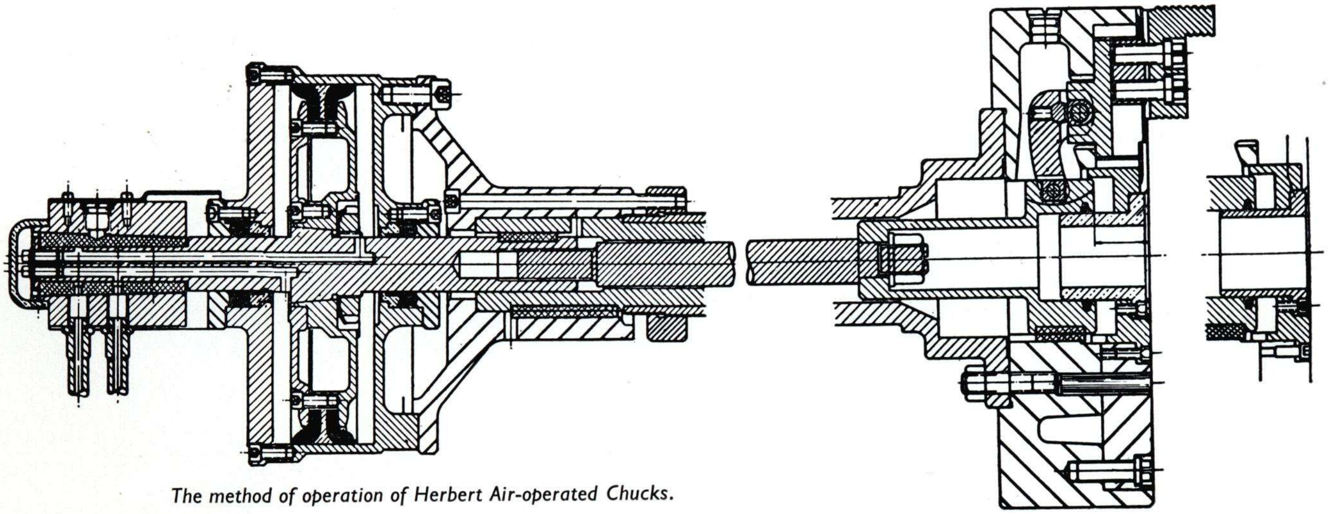
Details of operating cylinders, Air Pressure Variators, Monobloc Control Units etc., will be supplied upon request.



Three-jaw Air Chuck



Type 'L' Two-jaw Chuck with typical component in position.



The method of operation of Herbert Air-operated Chucks.

HERBERT ELECTRICALLY-OPERATED CHUCKS

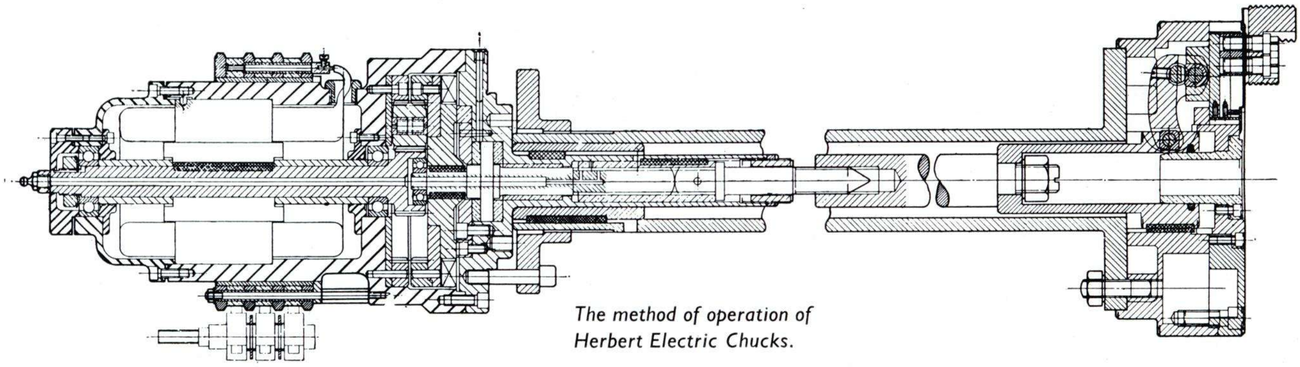
The Electric Chuck is a self-contained unit and is coupled to the machine wiring so that no additional equipment is required for the operation. Machines fitted for electric power chucking can be easily moved when re-arranging plant. Current consumption is negligible since power is used only when opening and closing the chuck.

The jaws are self-locking and the gripping pressure is unaffected by centrifugal force at high spindle speeds, or by failure of the power supply. Work can be left in the chuck for an indefinite period.

Herbert machines equipped with electrically-operated three-jaw chucks incorporate a small rotary switch which enables the most suitable of three available gripping pressures to be selected.

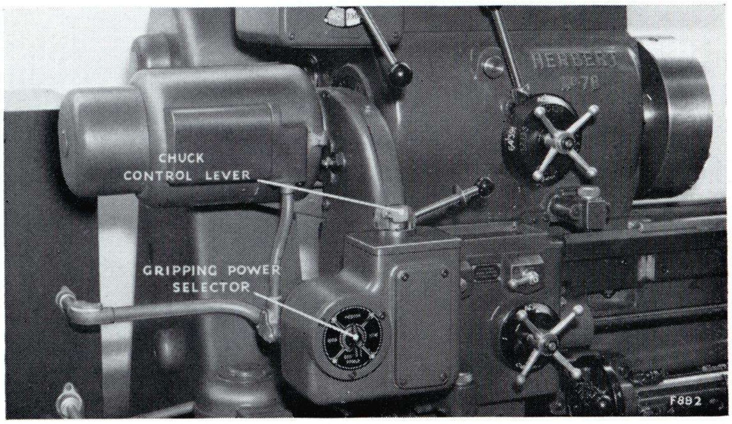
As with air-operated chucks, non-cutting time is minimised, extremely high gripping pressures are exerted and operational fatigue is minimised.

See chart on page 19 for detailed specifications of Electric Chucks.

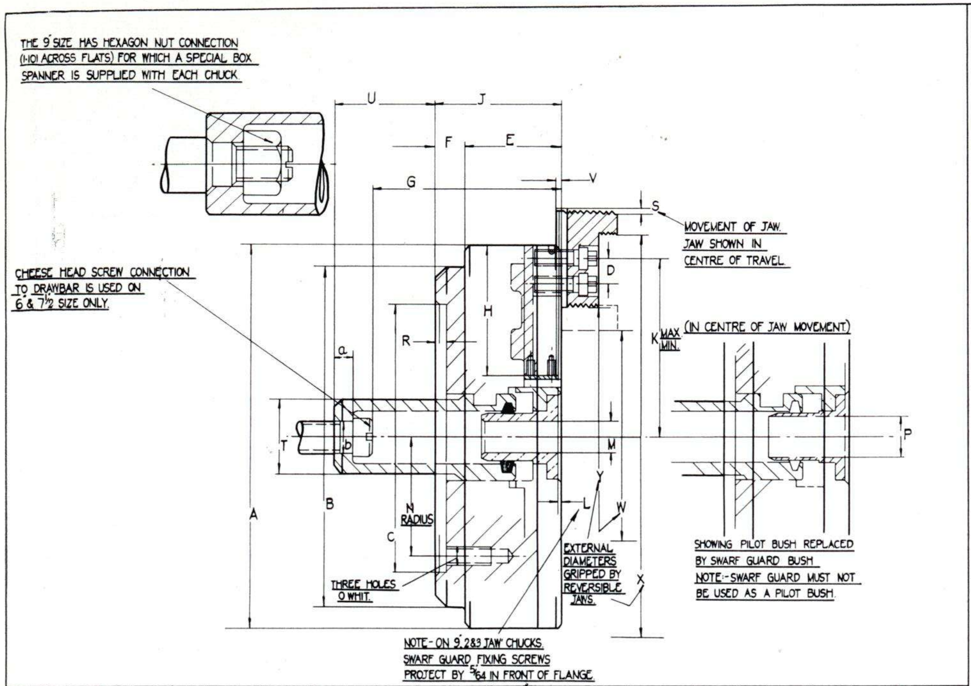


The method of operation of Herbert Electric Chucks.

Herbert No. 7B Combination Turret Lathe fitted with an electrically-operated 3-jaw chuck. The chuck control lever and the gripping power selector are shown in the foreground.



CAPACITY CHART FOR HERBERT AIR- AND ELECTRICALLY-OPERATED JAW CHUCKS



THE 9" SIZE HAS HEXAGON NUT CONNECTION (1·101 ACROSS FLATS) FOR WHICH A SPECIAL BOX SPANNER IS SUPPLIED WITH EACH CHUCK.

CHEESE HEAD SCREW CONNECTION TO DRAWBAR IS USED ON 6 & 7½ SIZE ONLY.

MOVEMENT OF JAW. JAW SHOWN IN CENTRE OF TRAVEL.

(IN CENTRE OF JAW MOVEMENT)

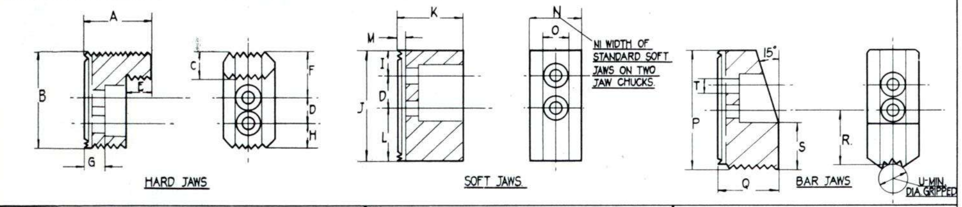
EXTERNAL DIAMETERS GRIPPED BY REVERSIBLE JAWS.

SHOWING PILOT BUSH REPLACED BY SWARF GUARD BUSH

NOTE:-SWARF GUARD MUST NOT BE USED AS A PILOT BUSH.

NOTE-ON 9" 2&3 JAW CHUCKS. SWARF GUARD FIXING SCREWS PROJECT BY 5/64 IN FRONT OF FLANGE.

SIZE OF CHUCK	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U	V	W ⊙	X ⊙	Y	a	b
6" 2 OR 3 JAW	6 1/4"	5 3/4"	5·25075 5·250	1/2"	1 3/4"	5/8"	3 7/8 MAX. 3 3/8 MIN.	2 1/32"	2 3/8"	2 27/32 MAX. 1 13/16 MIN.	5/32"	·50025 ·49975	2 11/32"	3/8 WHIT. 13/16 DEEP	3/4"	3/16"	1/8"	1 5/16"	2 1/4 MAX. 1 3/4 MIN.	1/16"	3 3/4 MAX. 1 11/16 MIN.	5 11/16 MAX. 3 5/8 MIN.	3 3/4 MAX. 1 11/16 MIN.	3/8"	41/64
7 1/2" 2 OR 3 JAW	7 1/2"	6 5/8"	5·25075 5·250	1/2"	1 27/32"	17/32"	3 7/8 MAX. 3 3/8 MIN.	2 9/16"	2 3/8"	3 7/16 MAX. 1 15/16 MIN.	5/32"	·62525 ·62475	2 11/32"	3/8 WHIT. 13/16 DEEP	7/8"	3/16"	1/8"	1 7/16"	2 1/4 MAX. 1 3/4 MIN.	1/16"	4 3/16 MAX. 1 13/16 MIN.	7 3/4 MAX. 4 3/4 MIN.	5 1/16 MAX. 2 1/16 MIN.	3/8"	41/64
9" 3 JAW	9"	8"	7·501 7·500	5/8"	2 1/2"	1 3/16"	5 11/16 MAX. 4 15/16 MIN.	2 5/8"	3 11/16"	4 1/8 MAX. 2 11/16 MIN.	11/64"	1·12525 1·12475	3 1/8"	1/2 WHIT. 1 1/4 DEEP	1 5/16"	5/16"	3/16"	2"	3 3/4 MAX. 3" MIN.	1/16"	4 7/8 MAX. 2" MIN.	8 5/16 MAX. 5 7/16 MIN.	5 15/16 MAX. 3 1/16 MIN.	3/4"	7/8"
9" 2 JAW	9 1/2"		7·501 7·500	5/8"			5 11/16 MAX. 4 15/16 MIN.	2 3/8"	3 11/16"	3 7/8 MAX. 2 11/16 MIN.	11/64"	1·12525 1·12475	3 1/8"	3-1/2 WHIT. 1 1/4 DEEP	1 5/16"	5/16"	3/16"	2"	3 3/4 MAX. 3" MIN.	1/16"	4 3/8 MAX. 2" MIN.	7 13/16 MAX. 5 7/16 MIN.	5 7/16 MAX. 3 1/16 MIN.	3/4"	7/8"



N1 WIDTH OF STANDARD SOFT JAWS ON TWO JAW CHUCKS.

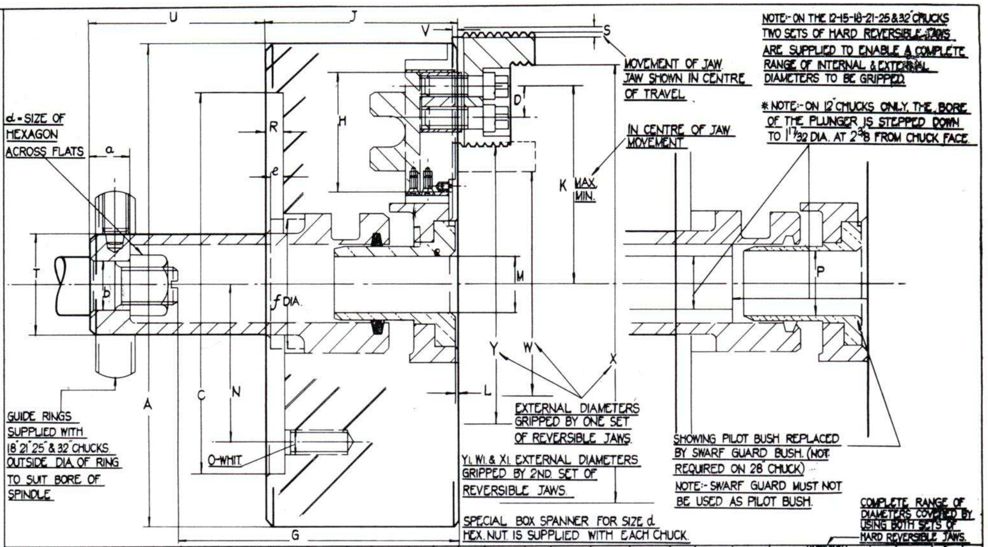
	STANDARD HARD JAWS								SOFT JAWS.								BAR JAWS.							
SIZE OF CHUCK.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	N1	P	Q	R	S	T	U		
* 6"	1 7/64	1 7/16	15/32	1/2	3/8	15/32	23/64	15/32	5/8	2 1/8	1 15/64	1"	1/8	1"	·502 ·500	2"	2 1/4	1 1/8	1 3/16	31/32	21/64	5/16		
* 7 1/2	1 7/64	1 3/4	13/32	1/2	3/8	27/32	23/64	13/32	5/8	2 1/8	1 15/64	1"	1/8	1"	·502 ·500	2"	2 5/16	1 1/8	1 1/8	7/8	21/64	15/32		
* 9"	1 9/16	2 7/32	1 1/32	5/8	1/2	1 1/16	9/16	17/32	13/16	2 3/4	1 3/4	1 5/16	5/32	1 5/16	·627 ·625	3"	3 19/64	1 9/16	7/8	5/8	15/32	1 1/16		

HARD JAW SIZES MARKED THUS * HAVE STRAIGHT GRIPPING PORTIONS (I.E. NOT CIRCULAR)

⊙ HARD JAW FOR 6" CHUCK CAN BE USED ON 7½" CHUCK TO GRIP DIA'S. 4 3/16"-4 3/4".

⊙ SPECIAL HARD JAWS ARE AVAILABLE ON 9" CHUCK TO GRIP DIA'S. 4 7/8"-5 7/16.

NOTE:- 9" BAR JAWS HAVE THREE SCREW HOLES.



d-SIZE OF HEXAGON ACROSS FLATS

GUIDE RINGS SUPPLIED WITH 18" 21" 25" & 32" CHUCKS OUTSIDE DIA OF RING TO SUIT BORE OF SPINDLE.

MOVEMENT OF JAW. JAW SHOWN IN CENTRE OF TRAVEL.

IN CENTRE OF JAW MOVEMENT

EXTERNAL DIAMETERS GRIPPED BY ONE SET OF REVERSIBLE JAWS.

Y1, W1 & X1 EXTERNAL DIAMETERS GRIPPED BY 2ND. SET OF REVERSIBLE JAWS.

SPECIAL BOX SPANNER FOR SIZE d HEX. NUT IS SUPPLIED WITH EACH CHUCK.

SHOWING PILOT BUSH REPLACED BY SWARF GUARD BUSH. (NOT REQUIRED ON 28" CHUCK)

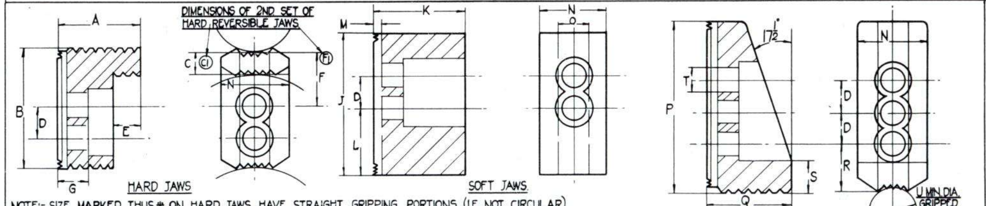
NOTE:- SWARF GUARD MUST NOT BE USED AS PILOT BUSH.

NOTE:- ON THE 12-15-18-21-25 & 32" CHUCKS TWO SETS OF HARD REVERSIBLE JAWS ARE SUPPLIED TO ENABLE A COMPLETE RANGE OF INTERNAL & EXTERNAL DIAMETERS TO BE GRIPPED.

* NOTE:- ON 12" CHUCKS ONLY, THE BORE OF THE PLUNGER IS STEPPED DOWN TO 1 17/32 DIA. AT 2 3/8 FROM CHUCK FACE.

COMPLETE RANGE OF DIAMETERS COVERED BY USING BOTH SETS OF HARD REVERSIBLE JAWS.

SIZE OF CHUCK	A	C	D	G	H	J	K	L	M	N	O	R	S	T	U	V	W	X	Y	P	W1	X1	Y1	INTERNAL DIAMETER GRIPPED.	a	b	d	e MAX.	f
12" 3 JAW	12 1/2	7·501 7·500	29/32	5 7/8 MAX. 5 1/8 MIN.	2 15/16	3 7/8	5" MAX. 3 11/16 MIN.	3/32	1·50075 1·49975	3 1/8	3-1/2 WHIT. 1 3/16 DEEP	5/16	3/16	2"	3 3/4 MAX. 3" MIN.	1/16	5 11/16 MAX. 3 1/16 MIN.	11" MAX. 8 3/8 MIN.	6 3/4 MAX. 4 1/8 MIN.	* 1 13/16	6 3/4 MAX. 4 1/8 MIN.	8 1/2 MAX. 6 1/8 MIN.	5 11/16 MAX. 3 1/16 MIN.	12 1/2 MAX. 4 5/8 MIN.	3/4	7/8	1·101.	0	
15" 3 JAW	15 1/2	10·0015 10·000	1 3/16	11 13/16 MAX. 9 1/16 MIN.	4 1/8	5 1/4	6 7/16 MAX. 4 3/8 MIN.	1/8	2·12575 2·12475	4"	3-3/4 WHIT. 1 1/4 DEEP.	5/8	11/32	3 1/2	8 5/16 MAX. 6 13/16 MIN.	3/32	7 5/16 MAX. 3 3/16 MIN.	14 7/16 MAX. 10 5/16 MIN.	8 1/8 MAX. 4" MIN.	2 5/16	7 5/16 MAX. 3 3/16 MIN.	11 13/16 MAX. 7 1/16 MIN.	8 11/16 MAX. 4 9/16 MIN.	16 11/16 MAX. 5" MIN.	1 1/4	1 1/4	1·479	0	
18" 3 JAW	18 3/4	10·0015 10·000	1 3/8	12" MAX. 10 1/2 MIN.	5 1/16	5 13/16	7 3/4 MAX. 5 1/4 MIN.	5/32	2·12575 2·12475	4"	3-3/4 WHIT. 1 1/8 DEEP.	3/4	11/32	3 5/16	8 13/16 MAX. 7 5/16 MIN.	3/32	9 1/4 MAX. 4 1/4 MIN.	17" MAX. 12" MIN.	10 1/2 MAX. 5 1/2 MIN.	2 5/8	10 5/8 MAX. 5 5/8 MIN.	13 1/2 MAX. 8 1/2 MIN.	9 3/16 MAX. 4 3/16 MIN.	19 1/8 MAX. 6 5/16 MIN.	1 1/4	1 1/4	1·479	5/8	3 1/2
18" 3 JAW	18 3/4	14·2515 14·2500								6 1/16	6-7/8 WHIT. THRO'.																		
21" 3 JAW	21 3/4	14·2515 14·250	1 5/8	13 9/16 MAX. 12 1/16 MIN.	5 13/16	6 7/16	9 1/16 MAX. 6 1/8 MIN.	PILOT BUSH	3·251 3·2495	6 1/16	6-7/8 WHIT. 1 3/4 DEEP	7/8	11/32	4 1/8	9 3/4 MAX. 8 1/4 MIN.	3/32	10 7/8 MAX. 5" MIN.	19 3/4 MAX. 13 7/8 MIN.	11 3/8 MAX. 5 1/2 MIN.	3 7/8	12 3/8 MAX. 6 1/2 MIN.	16 1/8 MAX. 10 1/2 MIN.	10 5/8 MAX. 4 3/4 MIN.	22 5/16 MAX. 7 9/16 MIN.	1 1/4	1 1/4	1·479	5/8	6 1/4
25" 3 JAW	25"	14·2515 14·250	2 1/8	14 1/2 MAX. 13" MIN.	7 1/8	6 1/2	10 9/16 MAX. 6 3/4 MIN.	IS FLUSH WITH	3·251 3·2495	6 1/16	6-7/8 WHIT. 1 3/4 DEEP	7/8	9/32	4 1/8	10 5/8 MAX. 9 1/8 MIN.	3/32	11 3/4 MAX. 4 1/8 MIN.	23 1/2 MAX. 15 3/4 MIN.	12 3/8 MAX. 4 3/4 MIN.	3 7/8	14 1/8 MAX. 6 1/2 MIN.	18 1/8 MAX. 10 1/2 MIN.	16 9/16 MAX. 8 15/16 MIN.	26 7/16 MAX. 7 1/8 MIN.	1 1/4	1 1/4	1·479	5/8	6 1/2
25" 3 JAW	25"	16·0015 16·000								6 7/8	6-1" WHIT. 2" DEEP																		
28" 3 JAW	28"	16·0015 16·000	2 3/8	16 1/8 MAX. 14 7/8 MIN.	7 5/16	7 1/2	11 3/4 MAX. 7 15/16 MIN.	FACE OF CHUCK	3·251 3·2495	6 7/8	6-1" WHIT. 2" DEEP	7/8	9/32	6"	10 5/8 MAX. 9 1/8 MIN.	1/8	14 1/2 MAX. 6 7/8 MIN.	25 3/8 MAX. 17 3/4 MIN.	15 1/4 MAX. 7 5/8 MIN.	5"	16 3/8 MAX. 8 3/4 MIN.	21 1/8 MAX. 13 1/2 MIN.	16" MAX. 8 3/4 MIN.	27 7/8 MAX. 9 3/8 MIN.	1"	1 5/8	1·860	0	



NOTE:- SIZE MARKED THUS * ON HARD JAWS HAVE STRAIGHT GRIPPING PORTIONS (I.E. NOT CIRCULAR)

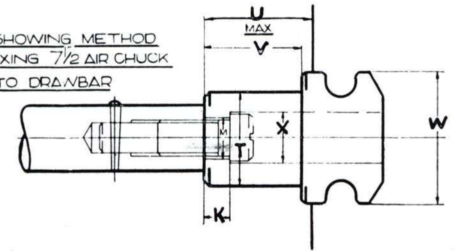
	REVERSIBLE JAW									SOFT JAW.							BAR JAWS.							
SIZE OF CHUCK	A	B	C	D	E	F	G	C1	F1	J	K	L	M	N	O	N1	P	Q	R	S	T	U		
* 12"	1 7/8	2 7/8	3/4	29/32	3/4	1 1/4	17/32	1 15/32	23/32	3"	2"	1 11/32	5/32	1 1/2	·689 ·687		4 9/32	1 13/16	1 7/32	7/16	17/32	1 5/16		
15"	2 3/16	3 25/32	13/16	1 3/16	13/16	1 19/32	11/16	2 7/16	1 19/32	3 3/4	2 1/4	1 9/16	5/32	1 3/4	·815 ·812		5 19/64	2 7/32	1 17/32	1/2	21/32	15/16		
18"	2 7/16	4 1/4	1"	-1 3/8	7/8	1 49/64	3/4	2 1/16	1 1/16	4 1/4	2 1/2	1 13/16	3/16	2 1/8	1·003 1·001		6 5/16	2 9/32	1 49/64	11/16	25/32	1 1/2		
21"	2 11/16	5 3/8	1 3/16	1 5/8	1"	2"	27/32	2 1/4	1 1/4	5 3/8	3"	2 1/16	1/4	2 1/4	1·003 1·001		7 11/32	3 7/64	1 3/4	9/16	25/32	2 1/4		
25"	2 15/16	6 15/32	1 13/32	2 1/8	1 1/8	2 9/16	27/32	2 7/8	1 3/8	6 1/4	3 1/4	2 1/2	5/16	2 1/4	1·003 1·001		7 59/64	3 5/8	1 7/16	15/16	25/32	2 1/8		
28"	2 15/16	6 11/16	1 13/32	2 3/8	1 1/8	2 1/4	27/32	2 5/8	1 5/16	6 3/4	3 1/4	2 3/4	1/4	2 1/4	1·003 1·001		8 11/16	3 5/8	1 25/32	1 15/16	25/32	3"		

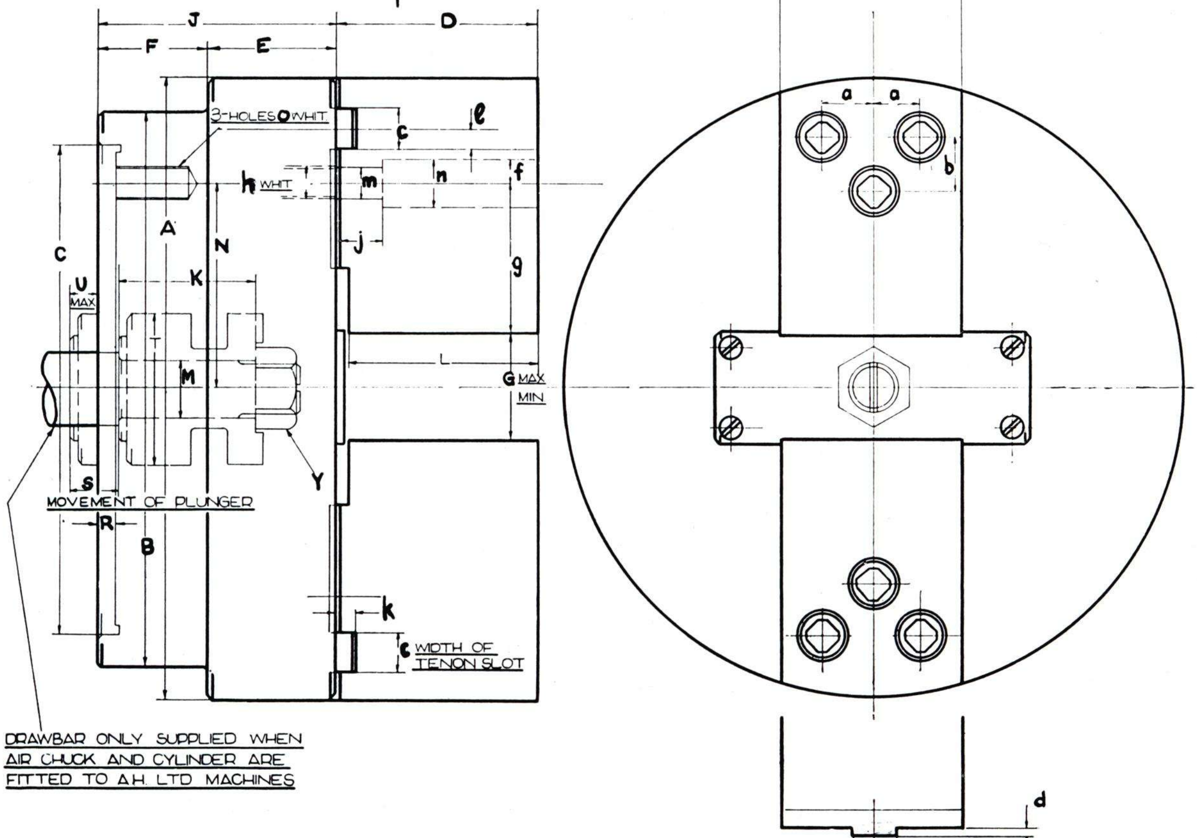
CAPACITY CHART
FOR HERBERT TYPE 'L' AIR-OPERATED CHUCKS

AIR CHUCK	A	B	C	D	E	F	G	H	J	K	L	M	N	O	R	S	T	U	V	W	X	Y
$7\frac{1}{2}$" TYPE 'L' 2 JAW AIR OPERATED CHUCK	$7\frac{1}{2}$"	6"	+5·25075 -5·250	$2\frac{19}{32}$"	$1\frac{1}{4}$"	$1\frac{1}{16}$"	MAX $1\frac{1}{16}$ MIN $\frac{1}{16}$"	$2\frac{1}{8}$"	$2\frac{5}{16}$	$\frac{3}{8}$"	$2\frac{3}{8}$	$\frac{41}{64}$	$2\frac{11}{32}$	$3-\frac{3}{8}$ WHIT $\frac{3}{4}$ DEEP	$\frac{3}{16}$	$\frac{1}{2}$	$1\frac{7}{16}$	$1\frac{19}{32}$	$1\frac{15}{32}$"	$2\frac{1}{16}$	$\frac{25}{32}$	
9" TYPE 'L' 2 JAW AIR OPERATED CHUCK	$9\frac{1}{2}$"	$8\frac{1}{2}$"	+7·501 -7·500	$3\frac{3}{32}$"	$1\frac{15}{16}$"	$1\frac{11}{16}$"	MAX $1\frac{9}{16}$" MIN $\frac{1}{16}$"	$2\frac{3}{4}$	$3\frac{5}{8}$	2	$2\frac{7}{8}$	$\frac{7}{8}$	$3\frac{1}{8}$	$3-\frac{1}{2}$ WHIT $1\frac{1}{4}$ DEEP	$\frac{5}{16}$	$\frac{3}{4}$	$2\frac{5}{16}$	$\frac{13}{32}$				$\frac{3}{4}$ WHIT 1·101 A/C FLATS

AIR CHUCK	a	b	c	d	e	f	g	h	j	k	ℓ	m	n
$7\frac{1}{2}$" TYPE 'L' 2 JAW	$\frac{9}{16}$	$\frac{3}{4}$	$\frac{9}{16}$ $^{+\cdot00025}_{-\cdot00025}$	$\frac{1}{8}$	$\frac{9}{16}$ $^{-\cdot00075}_{-\cdot00125}$	$\frac{15}{32}$"	$1\frac{21}{32}$	$\frac{7}{16}$	$\frac{5}{8}$	$\frac{9}{32}$"	$\frac{9}{32}$"	$\frac{15}{32}$"	$\frac{21}{32}$"
9" TYPE 'L' 2 JAW	$\frac{3}{4}$"	$\frac{7}{8}$"	$\frac{5}{8}$ $^{+\cdot00025}_{-\cdot00025}$	$\frac{1}{8}$	$\frac{5}{8}$ $^{-\cdot00075}_{-\cdot00125}$	$\frac{9}{16}$	$2\frac{5}{16}$"	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{17}{32}$	$\frac{3}{4}$"

VIEW SHOWING METHOD OF FIXING 7½ AIR CHUCK TO DRAWBAR

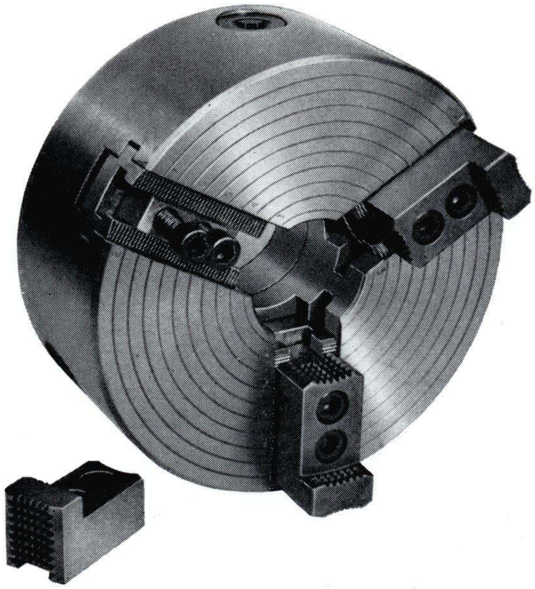




7½, AND 9 TYPE 'L' AIR CHUCKS.

EDGWICK UNICENTRIC GEARED SCROLL CHUCKS

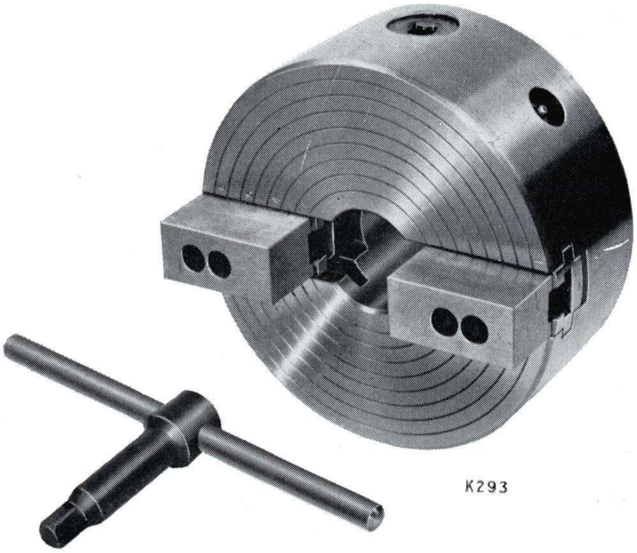
This chuck supplements the range of Coventry Concentric chucks for work requiring a large movement of the jaws. The ease with which jaws can be mounted is an outstanding contribution to the simple operation of the chuck. The smallest diameters can be gripped without re-adjustment and the facility and rapidity with which the chuck jaws can be set suit the chuck to holding eccentric components. Two and three-jaw chucks are made.



Three-jaw model

The strength of the chuck enables it to withstand the severe stresses imposed by the modern cutting techniques employed on combination and turret lathe applications. The diameter of the recess and the size and position of the tapped holes in the back of the chuck suit the spindle flanges of HERBERT and other turret lathes, eliminating intermediate adaptor-plates.

The scroll and pinion gearing is manufactured from materials of the highest quality throughout, ensuring maximum working life even under the most exacting conditions. Sizes 6½″, 7½″ and 9½″ in the 2-jaw model have only two pinions, situated on the periphery midway between the jaw-ways. 12″ models and sizes over 12″ have four pinions.



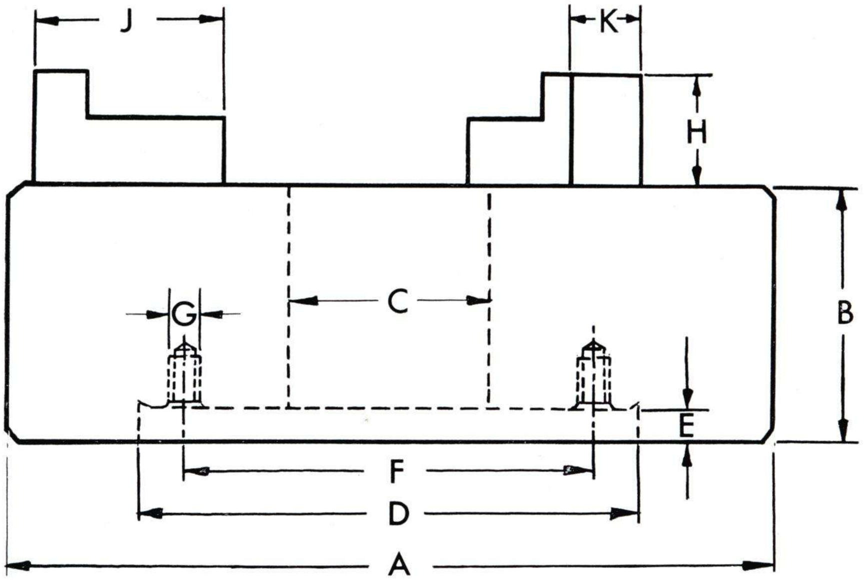
Two-jaw model

Chuck bodies of models 6½″ to 18″ diameter inclusive are of spheroidal cast-iron. Larger chucks have bodies of cast-steel. All bodies are heavily proportioned and cast in a single piece for strength.

Gripping jaws are attached to the master jaws by hexagon socket-head screws which engage with tee-nuts sliding freely in the body of the master jaws. Hardened, reversible gripping jaws are supplied as standard, but soft jaws can be supplied to any length or shape, machinable to customer's requirements.

A chuck operating key of suitable proportions is supplied with each chuck. Allen key and pinion removal key are also standard equipment.

CHUCK DIMENSIONS

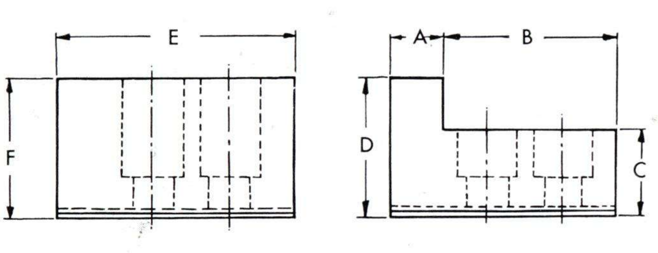


Nominal Size	Weight lbs.	A	B	C	D	E	F	G Whit.	H	J	K
6 1/2″	23	6 1/2″	2 25/32″	1 21/32″	5 1/4″	·210″	4 11/16″	3–3/8″	1 1/16″	1 7/8″	1″
7 1/2″	33	7 1/2″	3 1/32″	2 1/32″	5 1/4″	·210″	4 11/16″	3–3/8″	1 1/4″	2 1/8″	1 1/8″
9″	56	9 1/2″	3 9/16″	2 23/32″	7 1/2″	5/16″	6 1/4″	3–1/2″	1 1/2″	2 5/16″	1 5/16″
12″	94	12″	4″	3 7/32″	7 1/2″	1/2″	6 1/4″	3–1/2″	1 13/16″	2 7/8″	1 1/2″
15″	161	15″	4 7/16″	4 15/32″	10″	5/8″	8″	4–3/4″	2 1/8″	3 5/8″	1 3/4″
18″	275	18″	5 1/4″	5 15/32″	10″	7/8″	8″	4–3/4″	2 3/8″	4 1/4″	2 1/8″
21″	406	21″	5 1/4″	5 15/32″	14 1/4″	7/8″	12 1/8″	6–7/8″	2 5/8″	5 3/8″	2 1/8″
25″	530	25″	5 5/8″	9 7/32″	14 1/4″	1 1/4″	12 1/8″	6–7/8″	2 13/16″	6 1/4″	2 1/4″
29″	900	29″	6 3/8″	9 7/32″	16″	1 1/4″	13 3/4″	6–1″	3 3/16″	6 7/8″	2 1/4″

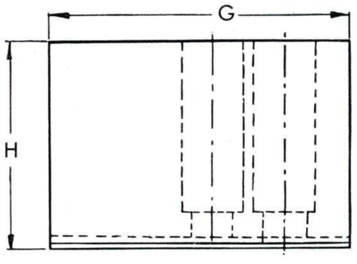
SIZES OF EDGWICK UNICENTRIC CHUCK FOR DIRECT MOUNTING ON HERBERT LATHES

Type of Herbert Lathe	*Dia. of Spindle Flange*	*Chuck Size*
Nos. 2, 2B, 2S, 2D, and 3 Capstans and Auto Junior Lathes	5 1/4″	6 1/2″ or 7 1/2″
Nos. 4, 4B, 4 Senior and 4 S.E. Capstans, Nos. 3 and 3A Autos, No. 4 Senior Dial Change, No. 4 Senior Preoptive and No. 4 Senior Monoslide Lathes ...	7 1/2″	9″ or 12″
Nos. 5A, 5B and 5 Senior Preoptive Capstans, No. 5 Senior Monoslide, Nos. 7 Junior, 6, 7, 7A and 7B Combination Turret, and No. 7 Preoptive Combination Turret Lathes	7 1/2″	12″
No. 8 Combination Turret, No. 5 Auto, No. 8 Preoptive Combination Turret and No. 4 Auto Lathes	10″	15″
Nos. 9, 9A, 9B and 10 Combination Turret Lathes	10″	15″ or 18″
No. 5A Auto Lathe (10″ flange prior to August 1959)	14 1/4″	18″
No. 9C Combination Turret Lathe	14 1/4″	18″
No. 12 Combination Turret Lathe	14 1/4″	21″
Nos. 20, 21 and 22 Combination Turret Lathe	14 1/4″	21″ or 25″
No. 50 Auto Lathe and 9C/30 Combination Turret Lathe	14 1/4″	21″ or 25″
No 9B/30 Combination Turret Lathe (10″ flange with adaptor up to August 1954). No. 5A/33 Auto Lathe	14 1/4″	25″
Nos. 12B and 12 Cross Sliding Combination Turret Lathes	16″	29″

PRINCIPAL JAW DIMENSIONS



Standard Soft



Large Soft

Chuck Size	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
6 1/2″	13/32″	1 3/8″	3/4″	1 1/8″	2 1/8″	1 1/4″	2 5/8″	2″
7 1/2″	9/16″	1 9/16″	7/8″	1 5/16″	2 1/2″	1 3/8″	3″	2 1/8″
9″	5/8″	1 11/16″	1 1/16″	1 9/16″	2 3/4″	1 5/8″	3 1/4″	2 3/4″
12″	27/32″	2 3/32″	1 1/8″	1 7/8″	3″	1 15/16″	4″	3″
15″	7/8″	2 23/32″	1 3/8″	2 3/16″	3 3/4″	2 1/4″	4 3/4″	3 1/4″
18″	1″	3 1/4″	1 9/16″	2 7/16″	4 1/4″	2 1/2″	5 1/2″	3 1/2″
21″	1 3/16″	4 3/16″	1 11/16″	2 11/16″	5 5/8″	2 3/4″	6 3/4″	4 1/4″
25″	1 13/32″	4 27/32″	1 13/16″	2 15/16″	6 1/4″	3″	7 3/4″	4 3/4″
29″	1 1/2″	5 3/8″	1 15/16″	3 5/16″	6 7/8″	3 3/8″	7 3/4″	4 3/4″

PRATT MANUALLY-OPERATED LATHE CHUCKS

Suitable for innumerable work-holding applications.

Many models are produced with a recess to fit the spindle flanges of HERBERT and other makes of Capstan and Turret Lathes. Back plates and intermediate adaptors can usually be supplied wherever necessary, details of which can be obtained upon request.

All chucks are manufactured to B.S.S. 1983:1953.

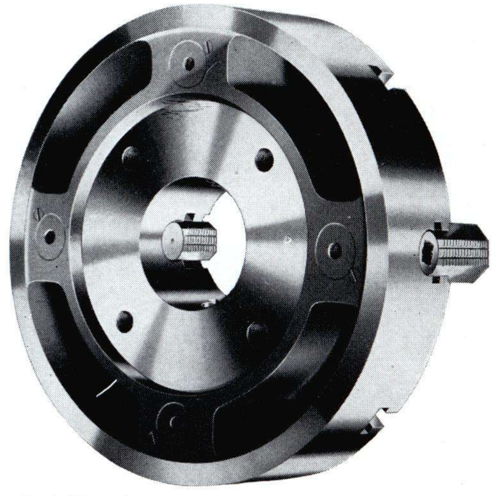
In addition to the normal range of chucks, Pratt offer a specialised service to meet the requirements of individual customers. Some of these special applications are illustrated later in this section.

A chuck operating key of suitable strength is supplied with each chuck.

4-JAW INDEPENDENT CHUCKS

These chucks have reversible gripping jaws which are made of case-hardened steel in one piece. All jaw steps are ground, facilitating setting on second operation work. Jaw slides are of ample proportions, and the use of the maximum length of jaw eliminates the tendency of jaws to tilt and wear rapidly.

Operating screws are of tempered Alloy Steel and have a square thread over the entire length, giving maximum contact between jaw and screw.



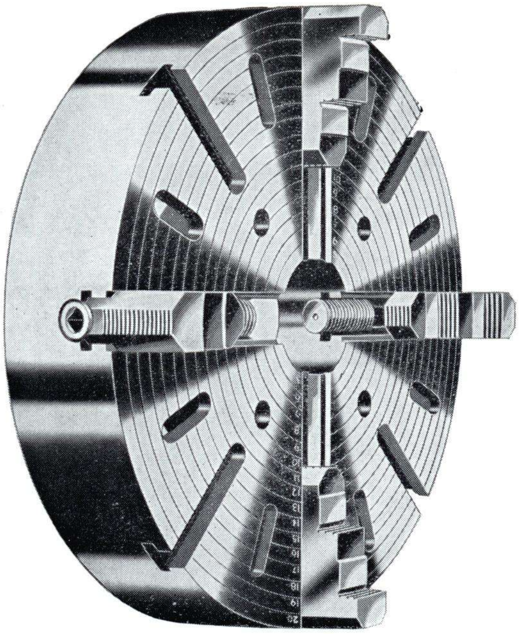
Back View showing recess suitable for direct mounting on a HERBERT Capstan or Combination Turret Lathe

No. 55 STANDARD IRON BODY CHUCKS

Designed for heavy work, the chuck body is of ample proportions and is graduated in inches to facilitate setting. Great strength and extreme accuracy are guaranteed. Each chuck has a recess in the back for the intermediate adaptor. Through slots only are provided in chucks 20″ to 48″ diameter.

Double thrust bearings are of robust proportions and suitably hardened. In the very small sizes, single thrust bearings only are fitted.

Tee slots are provided in 12″ and larger chucks.



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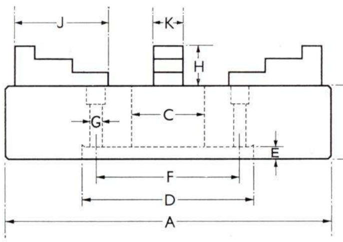
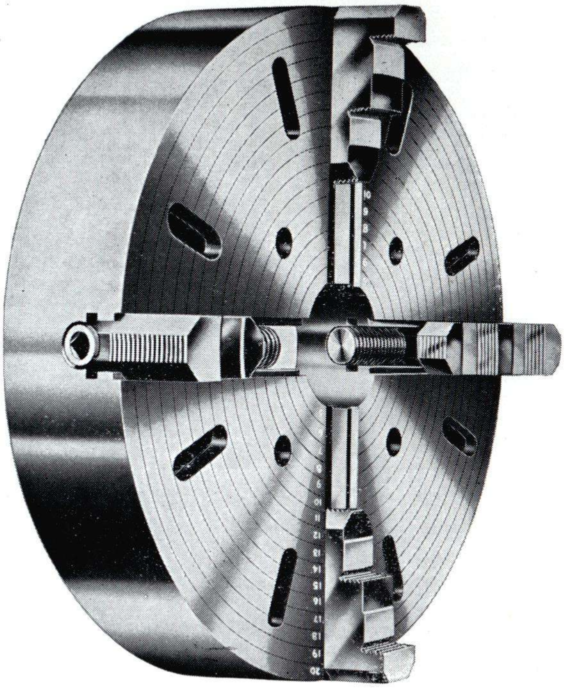


Size	Code Word	Weight in lbs.	A	B	C	D	E	F	Bolts G Whit.	H	J	K
4 1/2″	MEDRI	8	4 1/2″	2″	1″	4 1/8″	5/32″	3 3/8″	4–5/16″	7/8″	1 15/16″	3/4″
6″	MEDSO	16	6″	2 1/4″	1 9/16″	5″	3/16″	4 1/8″	4–3/8″	1″	2 1/8″	15/16″
8″	MEDTU	34	8″	3 1/8″	1 3/4″	4 3/4″	1/4″	3 7/8″	4–7/16″	1 5/16″	3 1/8″	1 3/16″
9″	MEDVY	43	9″	3 1/8″	1 3/4″	4 3/4″	1/4″	3 7/8″	4–7/16″	1 5/16″	3 1/8″	1 3/16″
10″	MEFPA	60	10″	3 1/4″	2″	6″	5/16″	5 1/8″	4–7/16″	1 1/2″	3 3/8″	1 3/8″
12″	MEFRE	80	12″	3 1/2″	2 3/4″	7″	1/2″	5 7/8″	4–1/2″	1 13/16″	3 7/8″	1 1/2″
14″	MEFSI	98	14″	3 1/2″	3″	7″	1/2″	5 7/8″	4–1/2″	2 1/16″	4 3/8″	1 1/2″
15″	MEFTO	117	15″	3 11/16″	3″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/16″	4 3/8″	1 1/2″
16″	MEFVU	126	16″	3 11/16″	3″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/16″	4 3/8″	1 1/2″
17″	MEDNA	153	17″	4″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/4″	5 1/8″	1 11/16″
18″	MEGRA	166	18″	4″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/4″	5 1/8″	1 11/16″
20″	MEGSE	204	20″	4 1/4″	4″	11″	5/8″	9 7/16″	4–3/4″	2 1/4″	5 1/8″	1 11/16″
22″	MEGTI	246	22″	4 1/4″	5″	11″	5/8″	9 5/16″	4–3/4″	2 5/8″	5 1/2″	1 15/16″
24″	MEGVO	322	24″	4 1/4″	5″	11″	5/8″	9 7/16″	4–3/4″	2 5/8″	5 1/2″	1 15/16″
26″	MEKBY	392	26″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/16″	6 9/16″	1 15/16″
28″	MEKVA	434	28″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/16″	6 9/16″	1 15/16″
30″	MEKYO	490	30″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/16″	6 9/16″	1 15/16″
32″	MEBME	596	32″	5 3/8″	6 1/2″	16″	1 3/8″	13 3/4″	4–7/8″	3 5/8″	7 3/4″	2 1/4″
36″	MEDPE	736	36″	5 3/8″	6 1/2″	17 3/4″	1 3/8″	15″	4–7/8″	3 5/8″	7 3/4″	2 1/4″
42″	MELBU	946	42″	5 3/4″	6 1/2″	17 3/4″	1 3/8″	15″	4-7/8″	3 5/8″	7 3/4″	2 1/4″
48″	MELCY	1260	48″	5 3/4″	8″	17 3/4″	7/8″	15″	4–7/8″	3 5/8″	7 3/4″	2 1/4″

No. 57 HEAVY ALL-STEEL CHUCKS

Handles heavy work on all types of lathes. The steel casting of the chuck body is proportioned so that no useless weight is supported by the machine spindle. Tee slots are not provided, but can be machined as an extra to special order. Through slots are only provided in chucks 20″ to 48″ diameter.

Large double thrust bearings, suitably hardened are fitted to all except the very small sizes which have only single thrust bearings.



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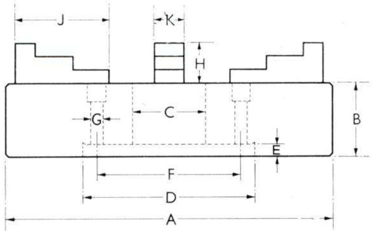
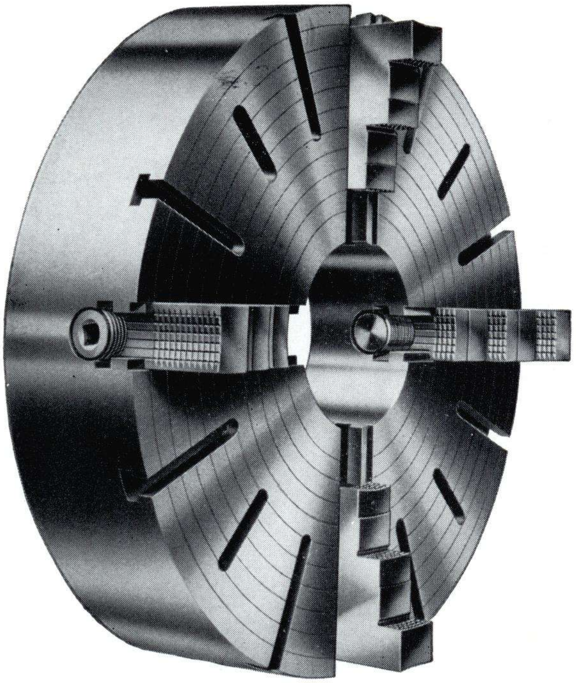


Size	Code Word	Weight in lbs.	A	B	C	D	E	F	Bolts G Whit.	H	J	K
6″	FAGYE	17	6″	2 1/4″	1 9/16″	5″	3/16″	4 1/8″	4–3/8″	1″	2 1/8″	15/16″
8″	FABSA	41	8″	3 1/8″	1 3/4″	4 3/4″	1/4″	3 7/8″	4–7/16″	1 5/16″	3 1/8″	1 3/16″
9″	FAGZI	44	9″	3 1/8″	1 3/4″	4 3/4″	1/4″	3 7/8″	4–7/16″	1 5/16″	3 1/8″	1 3/16″
10″	FABTE	67	10″	3 1/4″	2″	6″	5/16″	5 1/8″	4–7/16″	1 1/2″	3 3/8″	1 3/8″
12″	FABVI	85	12″	3 1/2″	2 3/4″	7″	1/2″	5 7/8″	4–1/2″	1 13/16″	3 7/8″	1 1/2″
14″	FACTA	114	14″	3 1/2″	3″	7″	1/2″	5 7/8″	4–1/2″	2 1/16″	4 3/8″	1 1/2″
15″	FACVE	136	15″	3 11/16″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 5/16″	5 1/8″	1 11/16″
16″	FACZY	150	16″	3 11/16″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 5/16″	5 1/8″	1 11/16″
17″	FADBY	180	17″	4″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/4″	5 1/8″	1 11/16″
18″	FADVA	190	18″	4″	4″	9 1/2″	5/8″	8 3/16″	4–5/8″	2 1/4″	5 1/8″	1 11/16″
20″	FADYO	226	20″	4 1/4″	4″	11″	5/8″	9 7/16″	4–3/4″	2 5/8″	5 1/2″	1 15/16″
22″	FADZU	312	22″	4 1/4″	5″	11″	5/8″	9 7/16″	4–3/4″	2 7/8″	6 9/16″	1 15/16″
24″	FAFBU	392	24″	4 1/4″	5″	11″	5/8″	9 7/16″	4–3/4″	2 7/8″	6 9/16″	1 15/16″
26″	FAFCY	468	26″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/8″	7 3/4″	2 1/4″
28″	FAFWA	520	28″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/8″	7 3/4″	2 1/4″
30″	FAFYI	566	30″	5″	5 1/2″	15″	1 3/8″	13″	4–3/4″	3 5/8″	7 3/4″	2 1/4″
32″	FAFWI	802	32″	5 3/8″	6 1/2″	16″	1 3/8″	13 3/4″	4–7/8″	3 5/8″	7 3/4″	2 1/4″
36″	FAGDY	896	36″	5 3/8″	6 1/2″	17 3/4″	1 3/8″	15″	4–7/8″	3 5/8″	7 3/4″	2 1/4″
42″	FAGHU	1064	42″	6″	6 1/2″	17 3/4″	1 3/8″	15″	4–7/8″	3 5/8″	7 3/4″	2 3/4″
48″	FAHAB	1540	48″	6″	8″	17 3/4″	7/8″	15″	4–7/8″	3 5/8″	7 3/4″	2 3/4″

No. 1935 ALL-STEEL SUPER DUTY CHUCKS

The steel body is made in one piece and will not spring or distort under the heaviest grip. Double thrust bearings of extremely large proportions are fitted, hardened on the wearing surfaces to ensure long life. These chucks have a recess and stud centres suitable for fitting to flange spindles of HERBERT and other makes of Turret Lathes.



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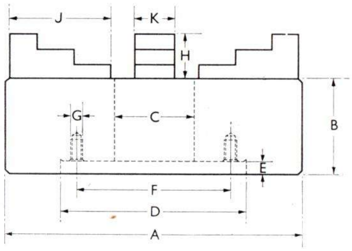
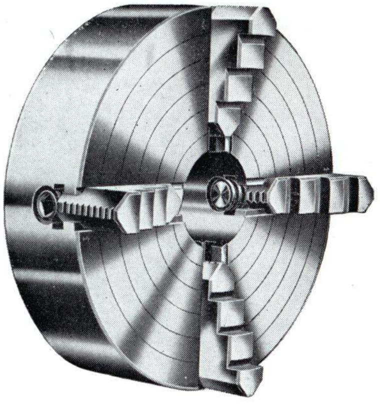


Size	Code Word	Weight in lbs.	A	B	C	D	E	F	Studs G Whit.	H	J	K
6″	SADCO	18	6″	2 1/2″	1 3/4″	5 1/4″	3/16″	4 11/16″	3–3/8″	1 1/32″	2 1/8″	15/16″
8″	SADDU	36	8″	3 1/8″	2 1/32″	5 1/4″	9/32″	4 11/16″	3–3/8″	1 5/16″	3 1/8″	1 3/16″
9″	SADEX	54	9″	3 3/8″	2 9/16″	7 1/2″	11/32″	6 1/4″	3–1/2″	1 1/2″	3 1/8″	1 3/8″
10″	SADOZ	69	10″	3 3/8″	2 23/32″	7 1/2″	11/32″	6 1/4″	3–1/2″	1 1/2″	3 3/8″	1 3/8″
12″	SADUB	98	12″	3 7/8″	3 7/32″	7 1/2″	1/2″	6 1/4″	3–1/2″	1 13/16″	4 1/8″	1 11/16″
15″	SADYA	162	15″	4″	3 7/8″	10″	5/8″	8″	4–3/4″	2 5/16″	5 1/8″	1 11/16″
16″	SADZE	191	16″	4 1/4″	4 15/32″	10″	5/8″	8″	4–3/4″	2 5/8″	5 1/2″	1 15/16″
18″	SAFAX	228	18″	4 1/2″	5 15/32″	10″	7/8″	8″	4–3/4″	2 5/8″	5 1/2″	1 15/16″
20″	SAFBE	326	20″	5 1/4″	5 15/32″	10″	7/8″	8″	4–3/4″	3 1/4″	6 5/8″	2 1/4″
20″	SAFBE	326	20″	5 1/4″	5 15/32″	13″	5/8″	11 1/4″	4–3/4″	3 1/4″	6 5/8″	2 1/4″
22″	SAFCI	414	22″	5 1/2″	6 1/2″	14 1/4″	1″	12 1/8″	6–7/8″	3 1/4″	6 5/8″	2 1/4″
24″	SAFDO	452	24″	5 1/2″	5 15/32″	10″	7/8″	8″	4–3/4″	3 1/4″	6 5/8″	2 1/4″
24″	SAFDO	452	24″	5 1/2″	9 7/32″	16″	1 1/4″	13 3/4″	6–1″	3 1/4″	6 5/8″	2 1/4″
24″	SAFDO	452	24″	5 1/2″	5 15/32″	13″	7/8″	11 1/4″	4–3/4″	3 1/4″	6 5/8″	2 1/4″
25″	SAFEY	493	25″	5 1/2″	7 5/16″	14 1/4″	1″	12 1/8″	6–7/8″	3 1/4″	6 5/8″	2 1/4″
26″	SAFFU	545	26″	6″	9 7/32″	16″	1 7/16″	13 3/4″	6–1″	3 5/8″	7 3/4″	2 1/4″
32″	SAFIZ	997	32″	7 1/4″	9 7/32″	14 1/4″	1 1/4″	12 1/8″	6–7/8″	3 5/8″	7 3/4″	2 3/4″
32″	SAFIZ	997	32″	7 1/4″	9 7/32″	16″	1 1/4″	13 3/4″	6–1″	3 5/8″	7 3/4″	2 3/4″
*32″	SAFIZ	957	32″	7 1/4″	9 7/32″	19″	1 1/4″	16 3/4	6–1″	3 5/8″	7 3/4″	2 3/4″

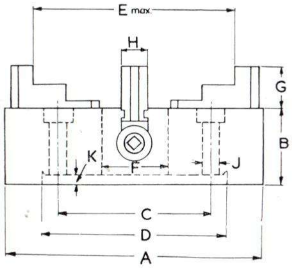
* This model is suitable for Herbert No. 14/36 Combination Turret Lathes.

No. 54 LIGHT TYPE CHUCKS



Intended for light bench lathes or amateur use, the weight and amount of overhang of the chuck have been reduced to a minimum.

Robust thrust bearings are fitted, and four set screws are supplied with each chuck for the backplate.



Specifications:

A	B	C	D*	E	F	G	H	J	K	Weight
6″	1 11/16″	2 3/4″	3 1/4″	6 1/4″	1 39/64″	13/16″	5/8″	25/64″	3/32″	10 lbs.
8″	1 15/16″	3 1/4″	3 1/4″	8 1/4″	1 5/8″	1″	3/4″	25/64″	1/8″	18 1/4 lbs.
10″	2 11/16″	4 3/8″	5″	10 1/4″	1 7/8″	1 1/16″	1″	29/64″	3/16″	41 1/2 lbs.

*Tolerance on this dimension +·001″ −·000″.

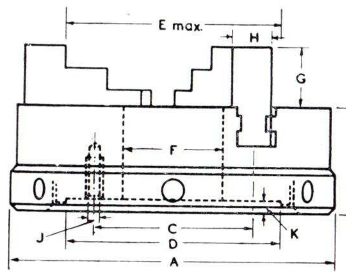
3 & 4-JAW LIGHT TYPE CHUCKS

No. 46 3-JAW LEVER SCROLL CHUCK

For all classes of small precision and amateur lathes Operated by a small lever, jaws are actuated by the usual scroll movement.

High precision is guaranteed and the body is made of an alloy steel, ensuring not only adequate strength, but reducing weight and overhang.

The two sets of jaws are case-hardened and ground where necessary.



Specifications

A	B	C	D*	E	F	G	H	J	K	Weight
3 3/16″	1 5/16″	1 15/16″	2 5/16″	3″	5/8″	19/32″	3/8″	1/4″ Whit.	1/4″	2 1/2 lbs.
4 1/8″	1 5/16″	2 3/16″	2 7/8″	4 1/4″	1 1/4″	3/4″	9/16″	5/8″ B.S.F.	3/32″	4 1/2 lbs.

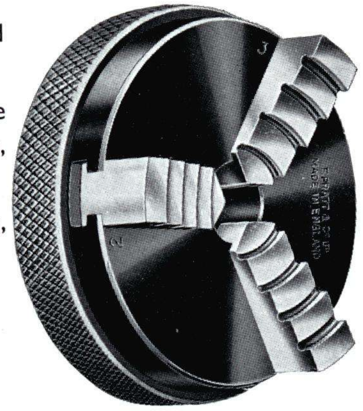
*Tolerance:— + ·0005″ −·0000″.

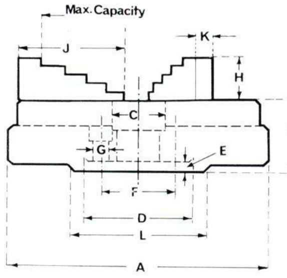
No. 48 3-JAW LIGHT PRECISION SCROLL CHUCK STEEL BODY - SELF CENTRING

Ideal for all types of jewellers', watchmakers' and instrument makers' lathes.

Delicate construction, which is essential for this type of work, is offset by the use of high-grade steels, ensuring strength and a long working life.

The two sets of jaws for internal and external gripping, are case-hardened and ground where necessary.





Specification:

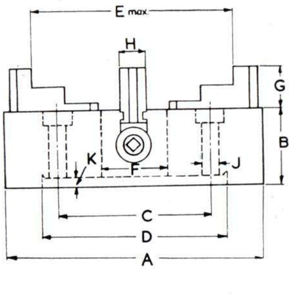
Capacity	*A*	*B*	*C*	*D**	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*Weight*
2¼"	2 7/16"	11/16"	15/32"	1"	1/16"	21/32"	3-⅛"	⅜"	31/32"	⅜"	1¼"	¾lb.

* Tolerance :- +·0005" – ·0000".

No. 52 4-JAW LIGHT-TYPE INDEPENDENT CHUCKS

Similar in construction and design to the heavy type No. 55, but intended for light work or amateur use only. They are designed for small lathes of delicate construction. Weight and overhang have been reduced to a minimum.

Specifications:



A	B	C	D*	E	F	G	H	J	K	Weight
3¼"	1⅛"	2 9/64"	2¾"	3½"	¾"	⅝"	⅜"	21/64"	1/16"	2¾ lbs.
4"	1⅛"	2 9/64"	2¾"	4¼"	1"	⅝"	⅜"	21/64"	1/16"	4 lbs.

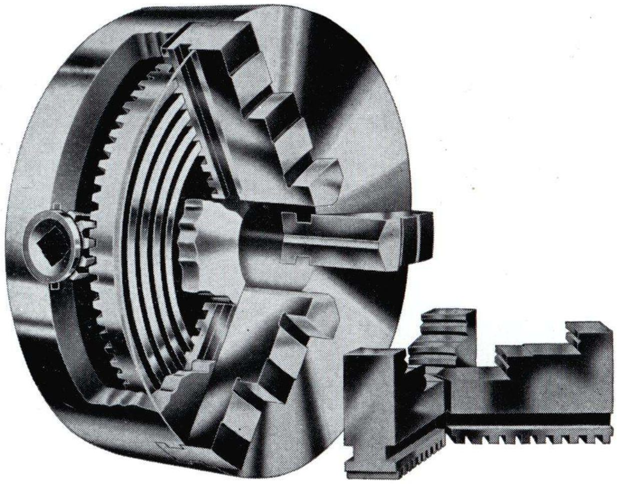
*Tolerance on this dimension +·001" –·000".

3-JAW GEARED SCROLL CHUCKS

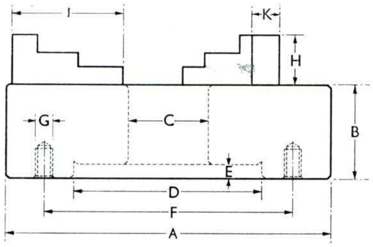
No. 58 IRON BODY & No. 78 STEEL BODY

These chucks are standardised with bodies either of iron or cast-steel. The scrolls are made from an exceptionally tough alloy steel. Pinion gears are of special design, having a square recess for operation by the Chuck Key.

Jaws are in one piece, of case-hardened steel. Unless otherwise ordered, two sets are supplied with each chuck, namely Inside Type A and Outside Type B. All gripping faces are hardened and jaws are ground to the finest limits. Soft Jaws, Type D, can be supplied as an alternative.

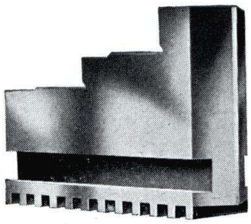


Specifications:

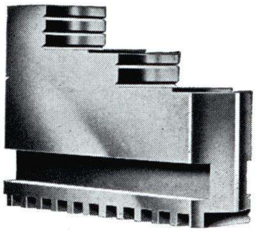


Model	A	B	C	D*	E	F	G	H	J	K	Weight
No. 58 & No. 78	3¼″	1 21/32″	¾″	2½″	5/64″	2 13/16″	3—10/32 U.N.F.	⅝″	1¼″	⅜″	3½ lbs.
,, ,,	4″	1 29/32″	1″	3″	3/32″	3½″	3—¼″ U.N.C.	11/16″	1⅝″	9/16″	6½ lbs.
,, ,,	5⅛″	2 5/32″	1½″	4″	⅛″	4½″	3—¼″ B.S.F.	29/32″	2″	⅝″	11¾ lbs.
,, ,,	6 1/16″	2 7/16″	1⅞″	5″	⅛″	5½″	3—5/16″ U.N.C.	29/32″	2 7/16″	¾″	17¼ lbs.
,, ,,	7½″	2 23/32″	2″	6″	5/32″	6¾″	3—⅜″ U.N.C.	1 5/16″	2⅝″	1″	31½ lbs.
,, ,,	9″	2 31/32″	2½″	7½″	3/16″	8¼″	3—⅜″ U.N.C.	1 5/16″	3⅛″	1″	46 lbs.
,, ,,	10¾″	3 5/16″	3″	8⅞″	3/16″	9¾″	3—⅜″ U.N.C.	1 27/32″	3⅝″	1¼″	75 lbs.
,, ,,	12⅛″	3½″	3⅛″	10¼″	¼″	11⅛″	3—7/16″ U.N.C.	1 27/32″	4″	1¼″	99 lbs.
,, ,,	15″	3 15/32″	3¼″	7″	½″	10″	3—⅝″ Whit.	1 31/32″	4⅞″	1 3/16″	143 lbs.
,, ,,	18″	3 23/32″	4″	9½″	⅝″	13″	3—⅝″ Whit.	3 3/32″	5⅞″	1½″	200 lbs.
,, ,,	21″	3 23/32″	4½″	9½″	⅝″	14″	3—⅝″ Whit.	2 3/32″	5⅞″	1½″	262 lbs.
,, ,,	24″	3 23/32″	4½″	9½″	⅝″	14″	3—⅝″ Whit.	2 3/32″	5⅞″	1½″	324 lbs.

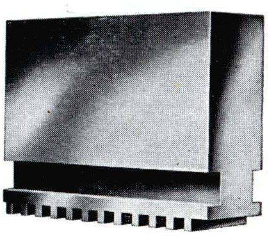
*Tolerance:—Up to 7½″ +·0005″ —·0000″. Beyond +·001″ —·0000″.



Inside Jaw
Type A



Outside Jaw
Type B

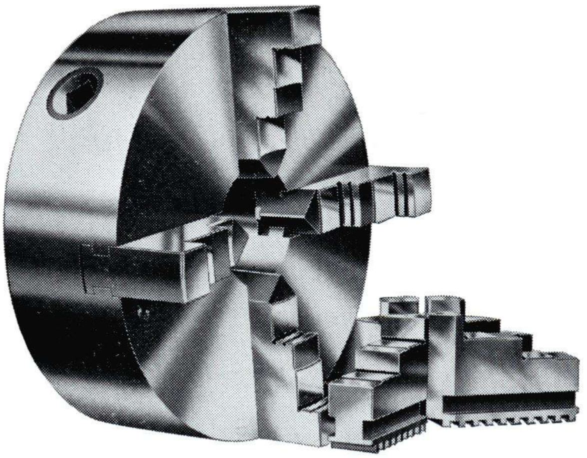


Soft Blank jaw
Type D

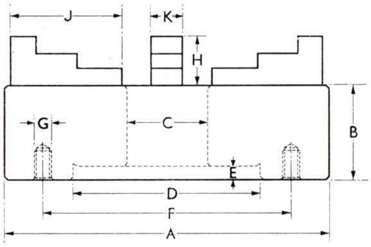
4-JAW GEARED SCROLL CHUCKS

No. 59 IRON BODY & No. 79 STEEL BODY

As in the case of the 3-Jaw Geared Scroll Chucks design is standardised and the steel chuck has superior strength. All the other features of design are used to equal advantage.



Specifications:



Size	Code Word 59	Code Word 79	Weight in lbs.	A	B	C	D	E	F	Screws G Whit.	H	J	K
4″	LANYA	HIMKY*	8	4 1/4″	2 1/8″	1″	3 1/16″	3/32″	3 9/16″	4–5/16″	13/16″	1 23/32″	17/32″
5″	LAPDO	HINFA*	12	5″	2 9/32″	1 1/4″	3 11/16″	3/32″	4 5/16″	4–5/16″	7/8″	1 29/32″	19/32″
6″	LAPZA	HINGE	17 1/2	6 1/8″	2 15/32″	1 9/16″	4 3/4″	3/16″	3 7/8″	4–7/16″	15/16″	2 3/8″	23/32″
7 1/2″	LABRA	HINHI	29	7 1/2″	2 3/4″	2″	4 3/4″	5/32″	6 1/8″	4–7/16″	1 9/32″	2 15/16″	13/16″
9″	LARDI	HINJO	42	9″	2 31/32″	2 1/2″	5 5/8″	3/16″	6 3/4″	4–7/16″	1 1/2″	3 1/2″	1″
10 1/2″	LARFO	HINKU	62	10 11/16″	3 1/8″	3″	5 5/8″	3/16″	6 3/4″	4–7/16″	1 11/16″	3 29/32″	1″
12″	LARGU	HINLY	88	12 1/8″	3 15/32″	3″	7″	1/2″	9 1/4″	4–5/8″	1 27/32″	4 1/8″	1 3/16″
15″	LASCA*	HIPGA*	143	15″	3 15/32″	3 1/4″	7″	1/2″	10″	4–5/8″	1 31/32″	4 7/8″	1 3/16″
18″	LASFI*	HIPHE*	200	18″	3 23/32″	4″	9 1/2″	5/8″	13″	4–5/8″	2 3/32″	5 7/8″	1 1/2″
21″	LASGO*	HIPJI*	262	21″	3 23/32″	4 1/2″	9 1/2″	5/8″	14″	4–5/8″	2 3/32″	5 7/8″	1 1/2″
24″	LASJY*	HIPKO*	324	24″	3 23/32″	4 1/2″	9 1/2″	5/8″	14″	4–5/8″	2 3/32″	5 7/8″	1 1/2″

* These models are supplied to special order only.

3 & 2-JAW HEAVY-DUTY GEARED SCROLL CHUCKS

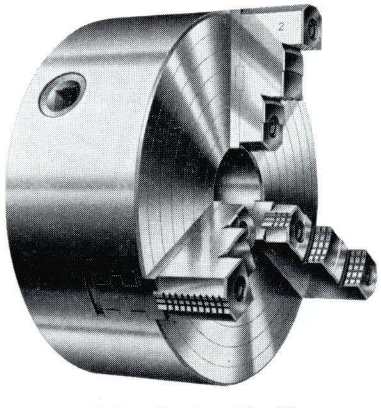
No. 95 3-JAW & No. 96 2-JAW

Heavy-duty self-centring chucks.

The high-grade iron chuck body is of the solid-shell pattern with double-ribbed jaw slides of ample proportions.

Jaws are case-hardened steel and exceptionally long in proportion to the size of chuck, giving maximum contact between the jaw teeth and the scroll in any position. Soft Jaws can be supplied to any length or shape required.

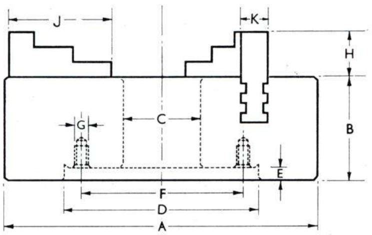
The scroll and pinion gearing are of heavy proportions in Chrome Vanadium heat-treated steel.

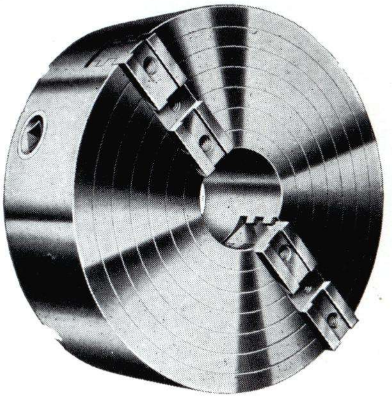


3-Jaw Chuck – No. 95

3 & 2-JAW HEAVY DUTY GEARED SCROLL CHUCKS contd.

Specifications:



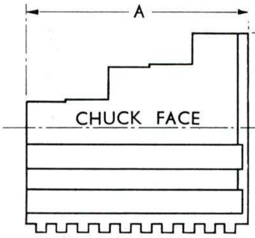


2-Jaw Chuck

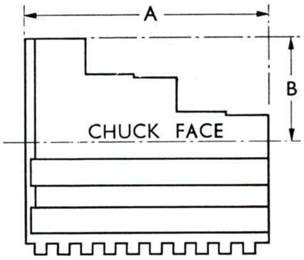
Size	Weight lbs.	A	B	C	D	E	F	G Whit.	H	J	K
9½″	67	9½″	3¾″	2½″	7½″	5/16″	6¼″	3–½″	1½″	3½″	1⅛″
12″	125	12 1/16″	4″	3″	7½″	½″	6¼″	3–½″	1¾″	4″	1½″
15″	185	15″	4 5/16″	3¼″	10″	½″	8″	4–¾″	2¼″	5 1/16″	1¾″
18″	287	18″	4½″	4¾″	10″	½″	8″	4–¾″	2½″	6″	1 15/16″
21″	388	21″	4½″	6¼″	14¼″	½″	12⅛″	6–⅞″	3″	6⅞″	1 15/16″

No. 96 18″ and 21″ models supplied to special order only.

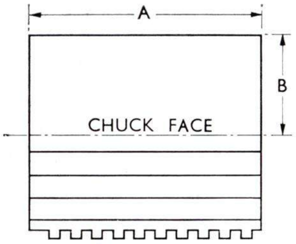
PRINCIPAL JAW DIMENSIONS:



Inside Jaw–Type A



Outside Jaw–Type B



Solid Soft Jaw–Type D

Size	A	B
9½″	3½″	1½″
12″	4″	1¾″
15″	5 1/16″	2¼″
18″	6″	2½″
21″	6⅞″	3″

2-PIECE JAWS

Pratt 2-piece jaws, which comprise base jaws and hard or soft gripping jaws, are in complete compliance with the American 2-piece jaw system. Details will be supplied upon request.

3-JAW UNIVERSAL CENTRING MACHINE CHUCKS

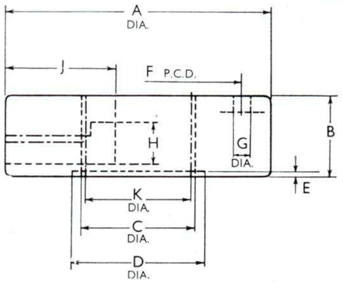
No. 80

For use on centring machines and on the rear end of lathe spindles for supporting bars, but not limited to these purposes. In cases where a quick, light gripping action will suffice, these chucks are ideal and rapidly centre work.

The chuck is mounted on the machine or spindle by means of an adaptor plate fitted to the body. The outer half of the chuck, which is free to rotate, has a scroll thread cut directly on the inside, thus moving the jaws rapidly in or out as required.

Jaws are case-hardened and ground on all gripping surfaces.

A chuck-operating Tommy bar is supplied with each chuck.

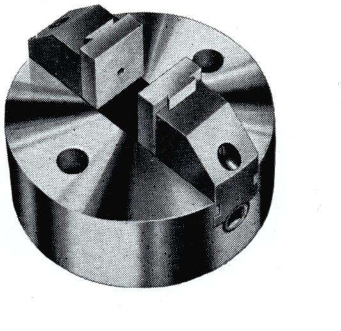


Specifications:

Size	Code Word	Weight lbs.	A	B	C	D	E	F	G	H	J	K
8"	MATJY	18 1/2	7 15/16"	2 9/16"	3 3/8"	4"	5/32"	6 3/16"	3–17/32"	1 1/4"	3 1/4"	3 3/16"
9 3/4"	MAVGI	27 1/2	9 3/4"	2 3/4"	4 9/16"	5 1/4"	5/32"	7 3/8"	3–17/32"	1 3/8"	4 13/32"	4 1/8"

2-JAW UNIVERSAL CHUCK

No. 88 Universal Central Screw Pattern

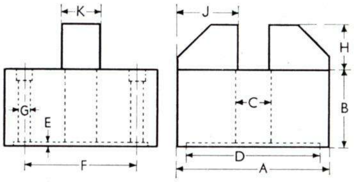


This is an especially strong "Universal" chuck. Operation is by a screw situated centrally beneath the jaws and housed in a hardened-steel double thrust bearing.

There is no hole through the cast-iron body of the chuck which gives this model very great strength and ensures that original accuracy is maintained under even the most strenuous conditions.

CODE WORDS

Size	Model No. 88
5″	HEWLA
6″	HEWPO
7 1/2″	HEXMA
9″	HEXPI
12″	HEXTY
15″	HEYNA



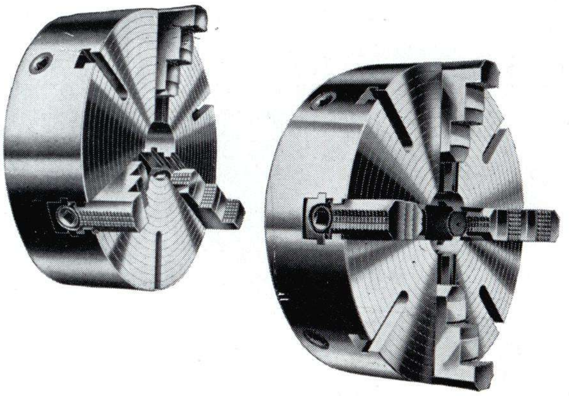
Specifications:

Size	Weight	A	B	D	E	F	G Whit.	H	J	K
5″	14 lbs.	5″	2 5/8″	4 1/8″	1/8″	3 5/8″	2–3/8″	1 1/4″	1 7/8″	1 3/16″
6″	24 lbs.	6″	3″	5″	1/8″	4 1/2″	2–1/2″	1 5/8″	2 1/2″	1 3/8″
7 1/2″	40 lbs.	7 1/2″	3 5/16″	6 11/16″	1/8″	5 1/8″	2–5/8″	1 3/4″	2 3/4″	1 11/16″
9″	54 lbs.	9 1/8″	3 1/2″	6 11/16″	1/8″	5 1/8″	2–5/8″	2″	3 3/8″	1 15/16″
12″	91 lbs.	12″	3 3/4″	9 1/2″	3/16″	8 7/16″	2–5/8″	2 7/8″	4″	2 1/4″
15″	140 lbs.	15″	4″	9 1/2″	3/16″	8 7/16″	2–5/8″	2 7/8″	5″	2 1/4″

With the exception of 6″, 9″ and 12″ No. 88 Chucks, all sizes will be supplied to special order only.

3 & 4-JAW GEARED SCROLL COMBINATION CHUCKS

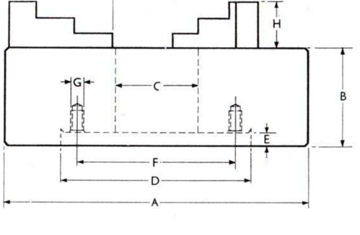
No. 60 3-JAW & No. 61 4-JAW



Steel bodies are fitted with either three or four jaws. The heavy pattern operating screws have a square thread over their entire length, giving the maximum contact between jaw and screw. The scrolls are made from exceptionally tough alloy steel. The design of the pinion gears is special, incorporating a square recess for the chuck key.

All the steps of the reversible, case-hardened steel gripping jaws are ground, ensuring accuracy for second-operation work. Jaw slides are of ample proportions and the jaws are of extreme length, removing any tendency to tilt or wear rapidly.

Tee slots are machined in 15″ and 18″ chucks, and can be machined as an extra in 9 1/2″ and 12″ chucks.



Specifications:

Size	Code Word 3-Jaw	Code Word 4-Jaw	Weight (lbs.) 3-Jaw	Weight (lbs.) 4-Jaw	A	B	C	D	E	F	G Whit.	H	J	K
9 1/2″	KALONG	JAMBOK	71	74	9 1/2″	4 5/32″	2 1/2″	7 1/2″	5/16″	6 1/4″	3–1/2″	1 1/2″	3 3/8″	1 3/8″
12″	KANOCK	JARRAN	108	124	12″	4 9/16″	3 7/32″	7 1/2″	1/2″	6 1/4″	3–1/2″	1 13/16″	3 7/8″	1 1/2″
15″	KAYASS	JASHER	208	212	15″	5 5/32″	3 1/2″	10″	5/8″	8″	4–3/4″	2 9/32″	5 1/8″	1 11/16″
18″	KABLAH	JATAKA	308	310	18″	5 5/8″	4″	10″	5/8″	8″	4–3/4″	2 5/8″	5 1/2″	1 15/16″

SPECIAL PRATT CHUCK APPLICATIONS

Pratt cater for special chucking applications; some are illustrated below.

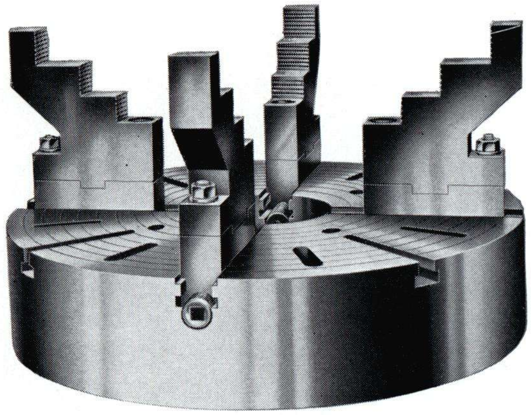


Fig. 1

End frames for large electric motors necessitate gripping in a Pratt 4-jaw Independent Chuck.

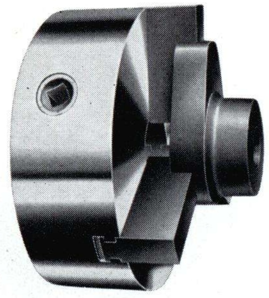


Fig. 3

Fig. 3 shows a textile machine cam held in special soft jaws. This method effected saving in time over the independent chuck application formerly used.

Fig. 2. Standard Scroll Chuck for gripping most delicate work. A glass tube is gripped whilst the bore is ground; the jaws exert considerable power without fear of breakage.

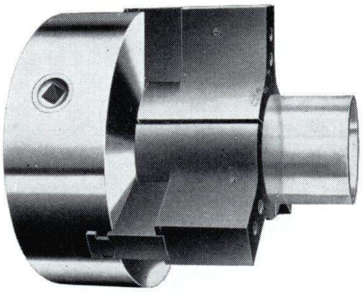


Fig. 2

For greater strength, the piston rings shown in Fig. 4 are cast with an angular flange, which is used to grip the component during machining. The jaws fit over the flange, drawing it hard back against the face of the jaws when gripped and giving a very firm hold on an awkward job.

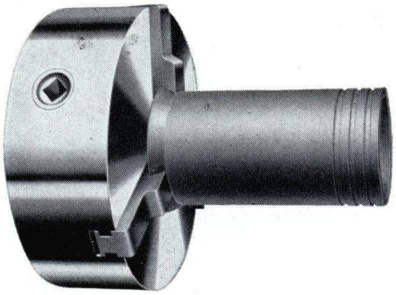


Fig. 4

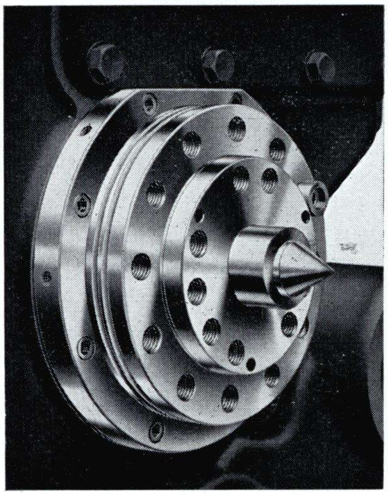
PRATT CHUCKS TO SUIT AMERICAN SPINDLE NOSES

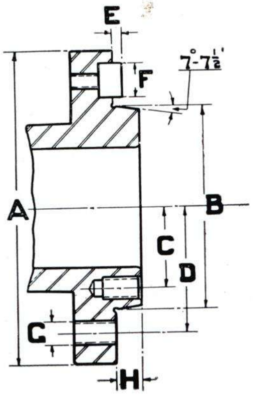
The chucks listed below are designed for fitting to American standard spindle noses. A wide range of normal-duty Independent and Geared Scroll Self-centring chucks is produced for the following spindles: Standard A.1, B.1, Camlock D.1, and long taper key drive Type L. For heavy-duty applications there is a further range of Independent and Self-centering chucks, specially designed for Automatic and Turret Lathe work and the Standard A.1 spindle.

Each of these chucks corresponds to a version suitable for British spindles, differing only in the mounting arrangements.

AMERICAN SPINDLE NOSES

STANDARD TYPE SPINDLE A.1





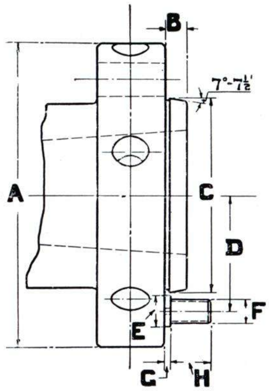
	4″ Nose	5″ Nose	6″ Nose	8″ Nose	11″ Nose	15″ Nose	20″ Nose
A	4¼″	5¼″	6½″	8¼″	11″	15″	20½″
B	2·5005 +·0005	3·2505 +·0005	4·1880 +·0005	5·50075 +·0005	7·75075 +·0005	11·251 +·001	16·251 +·001
C		1 7/32″	1⅝″	2 3/16″	3¼″	4⅞″	7¼″
D	1⅝″	2 1/16″	2⅝″	3⅜″	4⅝″	6½″	9⅛″
E	3/16″	3/16″	3/16″	¼″	5/16″	5/16″	5/16″
F	·5625	·625	·750	·9375	1·125	1·375	1·625
G	7/16″–14	7/16″–14	½″–13	⅝″–11	¾″–10	⅞″–9	1″–8
H	7/16″	·5625 –·001	·625 –·001	·6875 –·001	·750 –·001	·8125 –·001	·875 –·001

Chucks listed, suitable for mounting on this type of spindle are:—Nos. 155A, 157A, 158A, 178A, 3935A, 4747A.

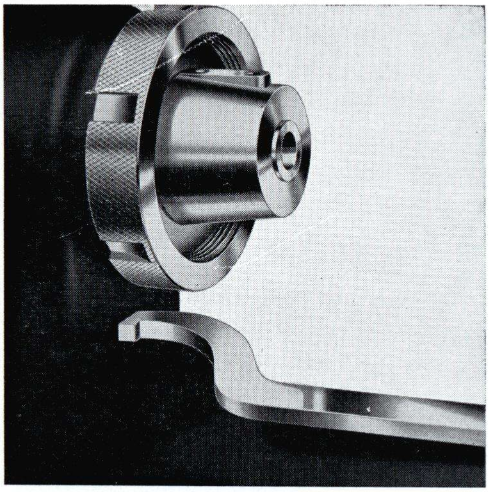
CAMLOCK TYPE SPINDLE D.1

	4″ Nose	5″ Nose	6″ Nose	8″ Nose	11″ Nose	15″ Nose	20″ Nose
A	4⅝	5¾	7⅛	8⅞	11¾	15⅞	21½
B	7/16	½	9/16	⅝	11/16	¾	13/16
C	2·5005 +·0005	3·2505 +·0005	4·1880 +·0005	5·50075 +·0005	7·75075 +·0005	11·251 +·001	16·251 +·001
D	1·625 ±·003	2·062 ±·003	2·625 ±·003	3·375 ±·003	4·625 ±·003	6·500 ±·003	9·125 ±·003
E	·625	·750	·875	1·000	1·1875	1·375	1·625
F	7/16–20	½–20	⅝–18	¾–16	⅞–14	1–14	1⅛–12
G	3/16	3/16	3/16	3/16	¼	¼	¼
H	¾	⅞	1 1/16	1 3/16	1⅜	1 9/16	1¾

The chucks listed for mounting on this type of spindle: Nos. 255D, 257D, 258D and 278D.

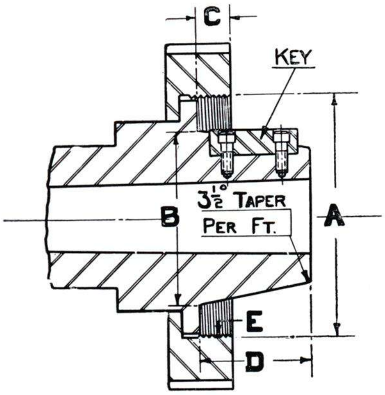


LONG TAPER KEY DRIVE SPINDLE—TYPE L



Spindle	*L.O.O*	*L.O*	*L.1*	*L.2*	*L.3*
A	3¾–6	4½–6	6–6	7¾–5	10⅜–4
B	2¾	3¼	4⅛	5¼	6½
C	21/32	11/16	¾	1	1 1/16
D	2	2⅜	2⅞	3⅜	3⅞
Key	⅜×⅜×1½	⅜×⅜×1¾	⅝×⅝×2⅜	¾×¾×2⅞	1×1×3¼

Chucks suitable for mounting on this spindle are types:—Nos. 355L, 357L, 358L and 378L.

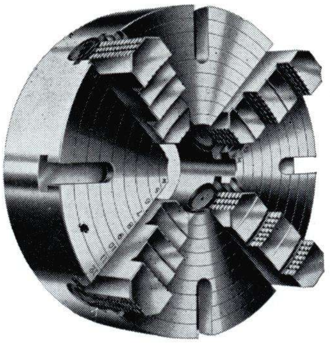


4-JAW INDEPENDENT CHUCKS FOR AMERICAN SPINDLES

These chucks are the versions of chucks Nos. 55 and 57 for British mountings, details of these will be found on pages 25 and 26.

Nos. 155A (IRON) and 157A (STEEL)

These chucks are suitable for type A.1 American short Taper Spindles.



Size of Chuck	*Short Taper Spindles*	*Code Word Chuck 155A*	*Code Word Chuck 157A*
6″	A1— 3″	CAHDA	OCGSA
6″	A1— 4″	CAHFA	OCGUA
8″	A1— 3″		OCABA
8″	A1— 4″	CAHGA	OCACA
8″	A1— 5″	CAKDA	OBJAA
8″	A1— 6″	CAKFA*	OBJEA
10″	A1— 4″	CAKJA	OCADA
10″	A1— 5″	CAKKA*	OBJIA
10″	A1— 6″	CALFA	OBJOA*
10″	A1— 8″		OCAEA
12″	A1— 5″	CALHA	OCAGA
12″	A1— 6″	CALJA*	OBJUA
12″	A1— 8″	CALKA*	OBKAA
14″	A1— 5″	CALBA	OCAHA
14″	A1— 6″	CAMGA*	OCAIA*
14″	A1— 8″	CAMJA	OCAJA
16″	A1— 6″	CAMKA	OCAKA
16″	A1— 8″	CAMLA*	OCANA*
16″	A1—11″	CAMMA	OCAOA
18″	A1— 6″	CANHA	OBKOA
18″	A1— 8″	CANJA	OBKUA
18″	A1—11″	CANKA*	OCARA*
20″	A1— 8″	CANLA	OCASA*
20″	A1—11″	CANNA	OCATA*
22″	A1— 8″	CAPJA	OCAVA
22″	A1—11″	CAPPA*	OCAWA*
24″	A1— 8″	CAPLA	OCAYA
24″	A1—11″	CAPMA*	OCAZA*
26″	A1— 8″	CAPNA	OCBAA
26″	A1—11″	CAPOA	OCBEA
28″	A1— 8″	CARKA	OCBHA
28″	A1—11″	CARLA	OCBIA
30″	A1— 8″	CARMA	OCBJA
30″	A1—11″	CARNA	OCBOA
32″	A1— 8″	CARPA	OCGRA
32″	A1—11″	CARRA	OCBUA
36″	A1— 8″	CASLA	OCCAA
36″	A1—11″	CASMA	OCCEA
42″	A1—11″	CASNA	OCCHA
42″	A1—15″	CASPA	OCCIA

* Chucks marked thus are available from stock or at short notice.

All other sizes are special.

Nos. 255D (IRON) and 257D (STEEL)

Suitable for American Type D.1 Camlock Spindles.

Size of Chuck	*Camlock Model*	*Code Word Chuck 255D*	*Code Word Chuck 257D*
6″	D1— 2″		OGGOD
6½	D1— 3″	CAHDD	
6½″	D1— 4″	CAHFD	
8″	D1— 3″	CAHGD*	OCABD
8″	D1— 4″	CAKDD	OCACD*
8″	D1— 5″	CAKFD	OBJAD
8″	D1— 6″	CAKGD	OBJED
10″	D1— 4″	CAKJD	OCADD
10″	D1— 5″	CAKKD	OBJID*
10″	D1— 6″	CALFD*	OBJOD*
10″	D1— 8″	CALGD	OCAED
12″	D1— 5″	CALHD	OCAGD
12″	D1— 6″	CALJD	OBJUD*
12″	D1— 8″	CALKD	OBKAD
14″	D1— 5″	CALBD	OCAHD
14″	D1— 6″	CAMGD	OCAID
14″	D1— 8″	CAMJD	OCAJD*
16″	D1— 6″	CAMKD	OCAKD
16″	D1— 8″	CAMLD	OCAND*
16″	D1—11″	CAMMD	OCAOD
17″	D1— 8″		OCHYB
18″	D1— 6″	CANHD	OVKOD
18″	D1— 8″	CANJD	OBKUD*
18″	D1—11″	CANKD	OCARD*
20″	D1— 8″	CANLD	OCASD
20″	D1—11″	CANND	OCATD
22″	D1— 8″	CAPJD	OCAVD
22″	D1—11″	CAPPD	OCAWD*
24″	D1— 8″	CAPLD	OCAYD
24″	D1—11″	CAPMD	OCAZD
26″	D1— 8″	CAPND	OCBAD
26″	D1—11″	CAPOD	OCBED*
28″	D1— 8″	CARKD	OCBHD
28″	D1—11″	CARLD	OCBID
30″	D1— 8″	CARMD	OCBJD
30″	D1—11″	CARND	OCBOD*
32″	D1— 8″	CARPD	OCBRD
32″	D1—11″	CARRD	OCBUD
36″	D1— 8″	CASLO	OCCAD
36″	D1—11″	CASMD	OCCED
42″	D1—11″	CASND	OCCHD
42″	D1—15″	CASPD	OCCID

Nos. 355L (IRON) and 357L (STEEL)

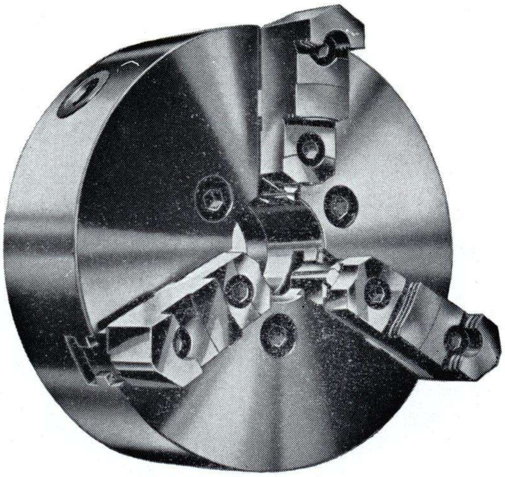
Suitable for American Type L Long Taper Spindles.

Size of Chuck	*Long Taper Spindles*	*Code Word Chuck 355L*	*Code Word Chuck 357L*
6½″	L.O.O	CABBY	
8″	L.O.O	CABVA*	OCCMO
8″	L.O	CABYO	OCCON
9″	L.O.O	CEPMI	
10″	L.O.O	CABZU	OCCPY
10″	L.O	CACBU*	OCCSE
10″	L.I	CACCY	OBNES
12″	L.O	CACWA	OCCUK
12″	L.1	CACYI*	OBNIT
12″	L.2	CACZO	OBNOV
14″	L.O	CADVO	OCCXU
14″	L.1	CADEN*	OCCYX
14″	L.2	CADDY	OCCZA
16″	L.1	CADYE	OCDAE
16″	L.2	CADZI*	OCDOR
18″	L.1	CAFBI	OBONI
18″	L.2	CAFCO*	OBOPO
18″	L.3	CAFDU	OBORU
20″	L.2	CAFFY	OCDFU
20″	L.3	CAFYA	OCDHA
22″	L.2	CAFZE	OCDIL
22″	L.3	CAGBE	OCDOW
24″	L.3	CAGCI	OBPIV
26″	L.3	CAGDO	OCOTI
28″	L.3	CAGFU	OPPON
30″	L.3	CAGGY	OCDUP
32″	L.3	CAGZO	OBPUX
36″	L.3	CAHBA	OBRAT
42″	L.3	CAHCE	OBREV

* Chucks marked thus are available from stock or at short notice. All other sizes are special.

PRATT 3-JAW GEARED SCROLL SELF-CENTRING CHUCKS FOR AMERICAN SPINDLE NOSES

The corresponding British versions of these chucks are Nos. 58 and 78, details of which will be found on page 30.



Nos. 158A (IRON) and 178A (STEEL)

Suitable for mounting on Type A1 American Short Taper Spindles and with American 2-piece jaw bases, these chucks can also be supplied for American B Type Spindles.

Size of Chuck	*Short Taper Spindles*	*Code Word Chuck 158A*
7½″	A1— 5″	CECBA*
7½″	A1— 6″	CEPLE
9″	A1— 6″	CECZA*
10½″	A1— 6″	CEDBA*
10½″	A1— 8″	CEDCA*
12″	A1— 6″	CEDDA
12″	A1— 8″	CEDFA*
15″	A1— 6″	CEDYA
15″	A1— 8″	CEDZA
15″	A1—11″	CEFBA
18″	A1— 8″	CEFCA
18″	A1—11″	CEFDA
21″	A1— 8″	CEFFA
21″	A1—11″	CEFGA
24″	A1— 8″	CEFZA
24″	A1—11″	CEGBA

Size of Chuck	*Short Taper Spindles*	*Code Word Chuck 178A*
7½″	A1— 5″	OCFUA
8¼″	A1— 5″	OTDIA
8¼″	A1— 6″	OTDOA
10″	A1— 5″	OTDUA
10″	A1— 6″	OTESA*
10″	A1— 8″	OTETA*
12″	A1— 6″	OTEVA
12″	A1— 8″	OTEWA*
15″	A1— 6″	OTEXA
15″	A1— 8″	OTFAA
15″	A1—11″	OCFYA*
18″	A1— 8″	OTFEA
18″	A1—11″	OCGAA*
21″	A1— 8″	OCGEA
21″	A1—11″	ACGIA*
24″	A1—11″	OCKZE

Nos. 258D (IRON) and 278D (STEEL) Suitable for American Type D1 Camlock Spindles.

Size of Chuck	*Camlock Model*	*Code Word Chuck 258D*
4″	D1— 2″	CAXVD
5″	D1— 3″	CAYSD
5″	D1— 4″	CAYTD
6″	D1— 3″	CAYVD*
6″	D1— 4″	CEBBD*
6″	D1— 5″	CEBED
7½″	D1— 4″	CEBZD
7½″	D1— 5″	CECBD*
7½″	D1— 6″	CECCD*
9″	D1— 5″	CECDD
9″	D1— 6″	CECZD
10½″	D1— 6″	CEDBD*
10½″	D1— 8″	CEDCD

Size of Chuck	*Camlock Model*	*Code Word Chuck 278D*
4″	D1— 2″	OCFED
5″	D1— 3″	OCFID
5″	D1— 4″	OCJID*
6½″	D1— 3″	OCFLD
6½″	D1— 4″	OCFOD
6½″	D1— 5″	OTDAD
6½″	D1— 6″	OTDED
7½″	D1— 4″	OCFRD
7″	D1— 5″	OCFUD
7½″	D1— 6″	OCFWD
8¼″	D1— 5″	OTDID*
8¼″	D1— 6″	OTDOD*
10″	D1— 5″	OTDUD

Nos. 258D (IRON) and 278D (STEEL) contd.

12″	D1— 6″	CEDDD	10″	D1— 6″	OTESD*
12″	D1— 8″	CEDFD*	10″	D1— 8″	OTETD*
15″	D1— 6″	CEDYD	12″	D1— 6″	OTEVD
15″	D1— 8″	CEDZD	12″	D1— 8″	OTEWD*
15″	D1—11″	CEFBD	15″	D1— 6″	OTEXD
18″	D1— 8″	CEFCD	15″	D1— 8″	OTFAD
18″	D1—11″	CEFDD	15″	D1—11″	OCFYD*
21″	D1— 8″	CEFFD	18″	D1— 8″	OTFED
21″	D1—11″	CEFGD	18″	D1—11″	OCGAD*
24″	D1— 8″	CEFZD	21″	D1— 8″	OCGED
24″	D1—11″	CEGBD	21″	D1—11″	OCGID

Nos. 358L (IRON) and 378L (STEEL) Suitable for American Type L Long Taper Spindles.

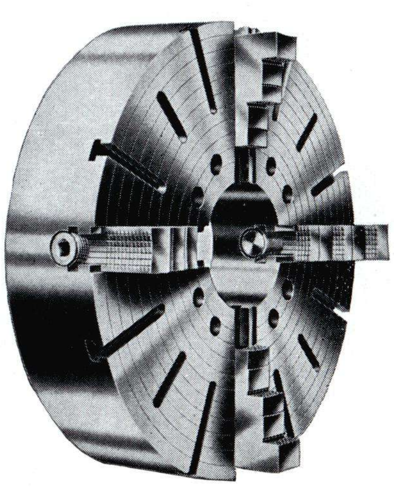
Size of Chuck	*Long Taper Spindles*	*Code Word Chuck 358L*	*Size of Chuck*	*Long Taper Spindles*	*Code Word Chuck 378L*
5″	L.O.O	GECGE	5″	L.O.O	OCEHB
5″	L.O	CEGDI	5″	L.O	OCEJH
6″	L.O.O	CEGFO*	6½″	L.O.O	OCELN
6″	L.O	CEGGU*	6½″	L.O	OCEMO
7½″	L.O.O	CEKFA*	7½″	L.O.O	OCENP
7½″	L.O	CEKJO*	7½″	L.O	OCEOX*
7½″	L.1	CEKKU	7½″	L.1	OCEPA
9″	L.O.O	CEKLY	8¼″	L.O.O	OCERD
9″	L.O	CELGA*	8¼″	L.O	OCESG
9″	L.1	CELJI*	8¼″	L.1	OCETJ
9″	L.2	CELKO	10″	L.O.O	OCEUM
10½″	L.O	CELLA	10″	L.O	OCEVU
10½″	L.1	CELMY*	10″	L.1	OTGAS*
10½″	L.2	CEMHA	10″	L.2	OTGET
12″	L.1	CEMJE*	12″	L.O.O	OCEWT
12″	L.2	CEMKI*	12″	L.O	OCEYZ
15″	L.2	CEMLO*	12″	L.1	OTGIV
15″	L.3	CENJA	12″	L.2	OTGOW
18″	L.2	CENKE	15″	L.O	OCFAG
18″	L.3	CENLI	15″	L.1	OTGUX
21″	L.3	CENPY	15″	L.2	OTHAT
24″	L.3	CEPKA	15″	L.3	OTHEV
			18″	L.2	OTHOX
			18″	L.3	OTITA
			21″	L.3	OTIVE

4-JAW SUPER-DUTY INDEPENDENT CHUCKS

No. 3935A

For mounting on Type A1 American Short Taper Spindles; are versions of the No. 1935 Chuck for British Mountings, which is described on page 27.

Diameter of Chuck	*Nominal Dia. of Spindle*	*Code Word*
8″	A1— 6″	OCDVO
10″	A1— 6″*	OFKAB
12″	A1— 8″*	OFKID
15″	A1— 8″	OFKOF
15″	A1—11″	OFKUG
18″	A1—11″	OFLPC
22″	A1—15″	OCEAF
25″	A1—15″	OFLIF
32″	A1—20″	OFLOG



* Chucks marked thus are available from stock or at short notice. All other sizes are special.

3-JAW EDGWICK UNICENTRIC CHUCKS FOR AMERICAN SPINDLES

No. 4747A

For use on Turret and Automatic Lathes, and suitable for mounting on Type A1 Short Taper Spindles and American Type D1 Camlock Spindles. The features of design are described on pages 21—23 for the British Mounting models.

FOR A.1 SPINDLES

Diameter of Chuck	*Nominal Dia. of Spindle*
9½″	A1— 6″
12″	A1— 6″
12″	A1— 8″
15″	A1— 8″
15″	A1—11″
18″	A1—11″
21″	A1—15″
25″	A1—15″
29″	A1—20″

FOR CAMLOCK D.1 SPINDLES

Diameter of Chuck	*Nominal Dia. of Spindle*
10″	D1— 6″
12″	D1— 8″
15″	D1—11″

PRATT FACEPLATE JAWS

In addition to supplying the standard types listed, we will quote for any special type of Faceplate Jaws.

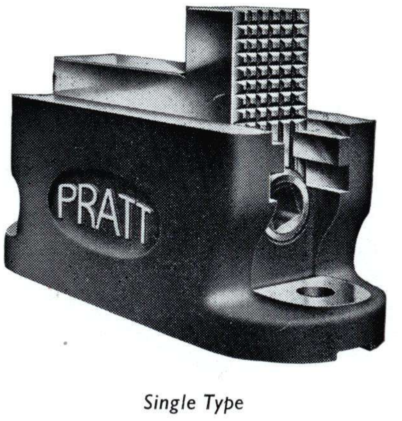
SUPER-DUTY REVERSIBLE PATTERN

Single Type—No. 66 (Iron Body) and No. 68 (Steel Body).

Double Type—No. 67 (Iron Body) and No. 69 (Steel Body).

Pratt Super-Duty Faceplate Jaws have a size range to cover all classes of faceplate work on lathes, from medium-light to the heaviest and largest components. Both single and double types are made with bodies of steel. The steel-body jaws are guaranteed to be unbreakable. 6″ sizes are also made with iron bodies.

Design eliminates all unnecessary dead weight, whilst its proportions guarantee maximum strength. The standard width of the body base in the double type may be increased to order, accommodating faceplate slots of exceptionally wide centres.

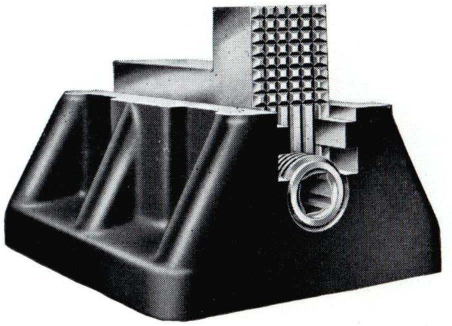


Single Type

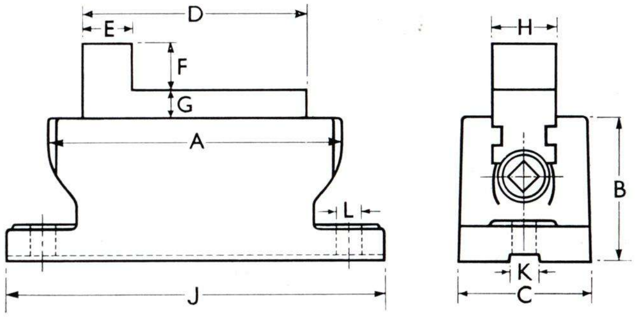
Gripping jaws are of ample proportions, and the diagrams illustrate the utilisation of extreme jaw-length, creating greater rigidity and strength. The jaws are case-hardened on all of their heavily serrated faces.

The heavy pattern operating screws are cut with a square thread over their entire length, giving maximum control between jaw and screw. Large double-thrust bearings give maximum bearing contact with the screw, and the hardened bearing surfaces ensure long, wearing life and the elimination of end play.

An operating key, suitably strong, is supplied with each set of jaws.



Double Type



CODE WORDS

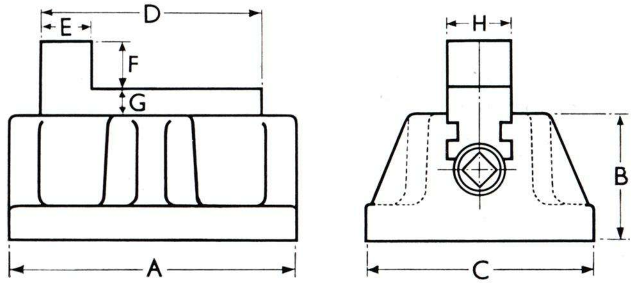
Nominal Size	*No. 66 (Iron)*	*No. 67 (Iron)*	*No. 68 (Steel)*	*No. 69 (Steel)*
6″	HATLO	HAYRO	HEGBU	HELGU
8″	—	—	HEGWA	HEMCA
10″	—	—	HEGYI	HEMFI
12″	—	—	HEGZO	HEMGO
14″	—	—	HEKDO	HEMJY

Specifications:

SINGLE TYPE—IRON No. 66 and STEEL No. 68

Size	*Weight of each jaw (lbs.)*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K*	*L*
6″	28	6″	4 3/16″	4″	4 3/4″	1 1/2″	1 9/16″	7/8″	1 15/16″	8 3/16″	1″	25/32″
* 8″	37	8″	4 3/16″	4 1/4″	5 9/16″	1 1/2″	1 9/16″	7/8″	1 15/16″	10 1/4″	1″	25/32″
*10″	60	10″	4 3/16″	4 5/8″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″	13″	1″	29/32″
*12″	82	12″	5 1/8″	4 7/8″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″	15 1/2″	1″	1 1/32″
*14″	94	14″	5 1/8″	5 1/2″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″	17 1/2″	1″	1 1/32″

* Steel bodies only.

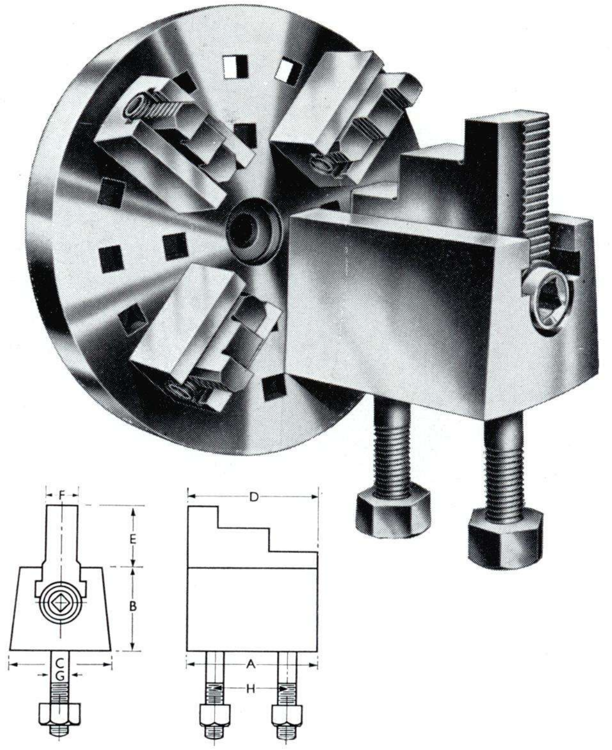


DOUBLE TYPE—IRON No. 67 and STEEL No. 69

Size	*Weight of each jaw (lbs.)*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
6″	29	6″	4″	8″	4 3/4″	1 1/2″	1 9/16″	7/8″	1 15/16″
* 8″	38	8″	4″	8″	5 9/16″	1 1/2″	1 9/16″	7/8″	1 15/16″
*10″	61	10″	4 3/8″	8″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″
*12″	84	12″	4 3/8″	8 1/4″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″
*14″	96	14″	4 3/8″	8 1/4″	7 3/4″	1 3/4″	1 9/16″	15/16″	2 1/4″

* Steel bodies only.

PRATT LIGHT-TYPE REVERSIBLE FACEPLATE JAWS



No. 71

For light work on small faceplates, or for holding large diameter work which is light in comparison with its size and where only light cuts are taken. The body and all working parts are of steel, reducing dead weight to a minimum and giving an extremely robust jaw in relation to its weight and size.

All gripping faces are hardened. The large diameter operating screw has a square thread over its entire length, giving maximum contact with the jaw. The large, double thrust bearings give maximum bearing contact with the screw, and the hardened bearing surfaces ensure a long working life and the elimination of end play.

An operating key is supplied with each set of jaws.

Specifications:

Size	Code Word Per Set of Four	Code Word Per Set of Three	Weight of each jaw (lbs.)	A	B	C	D	E	F	G	H
3″	BLAKO	BAKLY	5¼	3″	2¼″	2 7/16″	2¾″	1⅜″	15/16″	½″	1¾″
4″	BALLU	BALGA	9	4″	2½″	2 15/16″	3⅞″	1¾″	1 1/16″	⅝″	2¼″

PRATT AUTO-GRIP WORK DRIVER

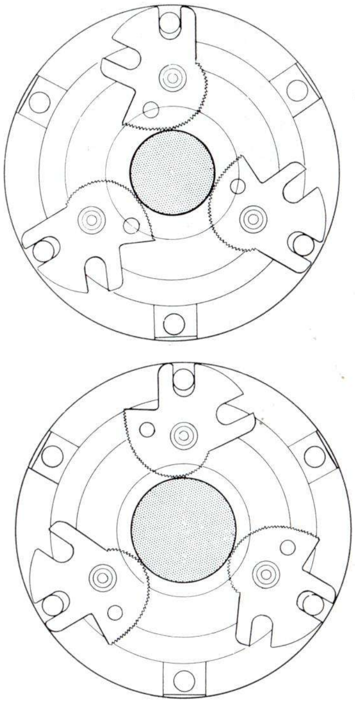
Provides the most efficient method of driving work in centre lathes whilst turning between centres. Loading and unloading is very rapid. Clean, projection-free lines of design eliminate the risk of unpleasant accidents to operators.

The drive is arranged in either direction, and jaw design ensures that it is positive even on eccentric or out-of-round blanks over a wide range of sizes. An automatic action balances the load imposed by the cutting tool on the component.

Standard and High Speed types are available. The Standard type achieves a very wide gripping range, using a minimum number of sets of jaws, due to the Pratt patent two-position design of jaw. The High Speed type have special patented jaws which are counter balanced to take advantage of centrifugal force in gripping the work.

Jaws are of hardened steel to give long life, and are spaced 120° apart. The floating ring construction ensures that the drive is transmitted around the component.

Loading and unloading can be performed entirely by hand, eliminating the use of keys or spanners.



The two-position Indexing Jaw enables a wider range of work sizes to be gripped

STANDARD TYPE

Dimensions:

	Size No. 1	Size No. 2	Size No. 3	Size No. 4
Total Capacity … … … …	5/16"–1 3/8"	7/16"–2"	1/2"–3"	3/4"–5 1/4"
Capacity with Jaws A … … …	5/16"–1 3/8"	1 1/2"–2"	2 3/8"–3"	4 1/4"–5 1/4"
Capacity with Jaws B … … …	—	7/16"–1 1/2"	1/2"–2 3/8"	2 1/4"–4 1/4"
Capacity with Jaws C … … …	—	—	—	3/4"–2 1/4"
Width of Jaw Face … … … …	5/16"	5/16"	3/8"	1/2"
Outside Diameter of Operating Cover …	6"	7 1/2"	10 1/8"	13 3/8"
Width of Work Driver … … …	1 15/16"	2 3/16"	2 3/4"	2 7/8"
Outside Diameter of Body … … …	5 1/2"	7"	9 3/8"	12 5/8"
Maximum Recommended Speed (r.p.m.)	1,500	1,500	1,400	1,000

HIGH SPEED TYPE

These are for speeds exceeding the above, and all dimensions other than those stated are identical.

Work Driver Size … … … …	No. 1 H.S.	No. 2 H.S.	No. 3 H.S.	No. 4 H.S.
Total Capacity … … … …	5/16"–1 7/16"	1/2"–2 1/2"	5/8"–3 1/2"	1"–5 3/4"
Capacity with Jaws HA … … …	1"–1 7/16"	2"–2 1/2"	2 7/8"–3 1/2"	4 7/8"–5 3/4"
Capacity with Jaws HB … … …	5/16"–1 1/16"	1 7/16"–2 1/8"	2"–3"	4"–5"
Capacity with Jaws HC … … …	—	1/2"–1 1/2"	5/8"–2 1/8"	2 3/4"–4 1/8"
Capacity with Jaws HD … … …	—	—	—	1"–2 7/8"

Adaptor Plate Castings can be supplied upon request.

PRATT-WOODWORTH AIR-OPERATED DIAPHRAGM CHUCKS

Diaphragm chucking is becoming an accepted practice. Variants of this precision gripping system are well known on Grinding Machines, and are being used on other machine tools as a high precision chucking method.

The system depends upon the slight deformation of a diaphragm plate, which is in effect the face of the chuck itself. The diaphragm, firmly secured by its outer edges, is deformed at its centre by means of an air-operated piston, increasing the location diameter by several thousandths of an inch, which is sufficient for the insertion of the component. When the air pressure is released, the diaphragm attempts to return to its original position, due to the resilience of the material, gripping the work.

The hydrogen-brazed construction of the diaphragm ensures consistent accuracy, and the whole assembly is balanced for high-speed operation. Low weight minimises wear on brake and spindle bearings.

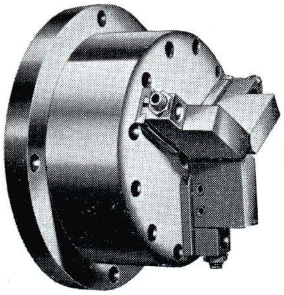
A built-in air cylinder assembly eliminates end thrust on spindle bearings and simplifies installation. Diaphragm assemblies are interchangeable on air cylinders of the same size.

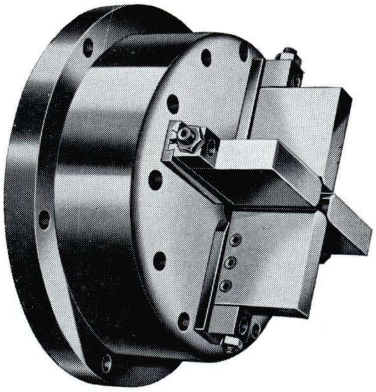
Numerous types of fixed or receding work-stops can be incorporated in the chuck assembly. Jaws are adjustable and can be replaced. The patented dovetail construction of the jaw mounting is rigid and foolproof. Adaptor plates can be supplied to suit most machines including HEALD models 271, 212, 216, and 171.

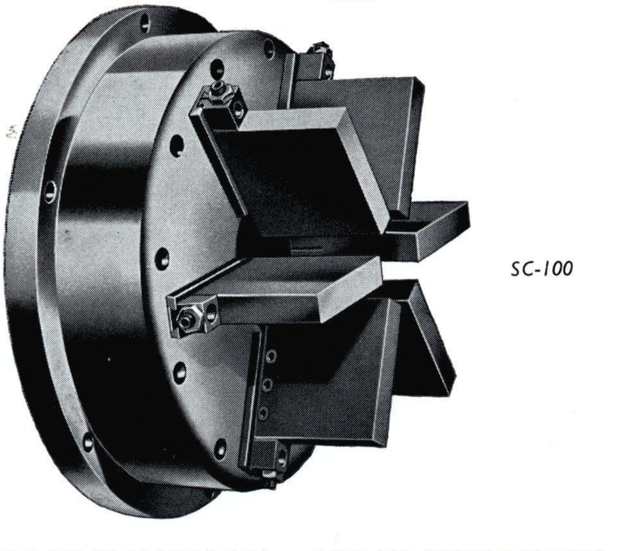
A range of three sizes is provided in both Standard and Fixed-Stop Series. The 'Standard Chuck' includes a Faceplate Adaptor, built-in air cylinder, diaphragm assembly, a set of jaws (any size), jaw stops, a rotary slip coupling and complete installation instructions. The 'Fixed-Stop' Series is supplied with adaptors in the diaphragm assembly for stop posts and centre stop.

SC-500 (STANDARD) and SC-501 (FIXED STOP)
These are 3-jaw chucks having a nominal diameter of 5½″. The recommended range of components is ⅛″–3½″ diameter. Maximum chucking pressure, 1100 lbs.

SC-700 (STANDARD) and SC-701 (FIXED STOP)
Four-jaw chucks of 7″ nominal diameter, recommended for a range of components ½″–4″ diameter, maximum chucking pressure 1,900 lbs.


SC-500


SC-700


SC-100

SC-100 (STANDARD) and SC-101 (FIXED STOP)
A 6-jaw chuck of 10″ nominal diameter, suitable for work 1″–6″ diameter. Maximum chucking pressure 4,000 lbs.
Further details of chucks, adaptor plates and jaws can be obtained upon request.

TAYLOR HEAVY-DUTY LATHE CHUCKS

The body of the Taylor chuck is Grade 'A' Hepolite cast-iron, 20 tons tensile, and having its front face in the form of a hollow cone. In this face are cut the slots in which the jaws slide. In all sizes over 8½", the central portion of the body passes right through to the back, giving maximum strength with minimum depth.

All working parts are hardened and ground, manufactured to limit gauges to ensure interchangeability. The operating bevel pinions are of nickel chrome molybdenum steel and have teeth of a specially strong design. They are heat-treated, ground and tested before assembly.

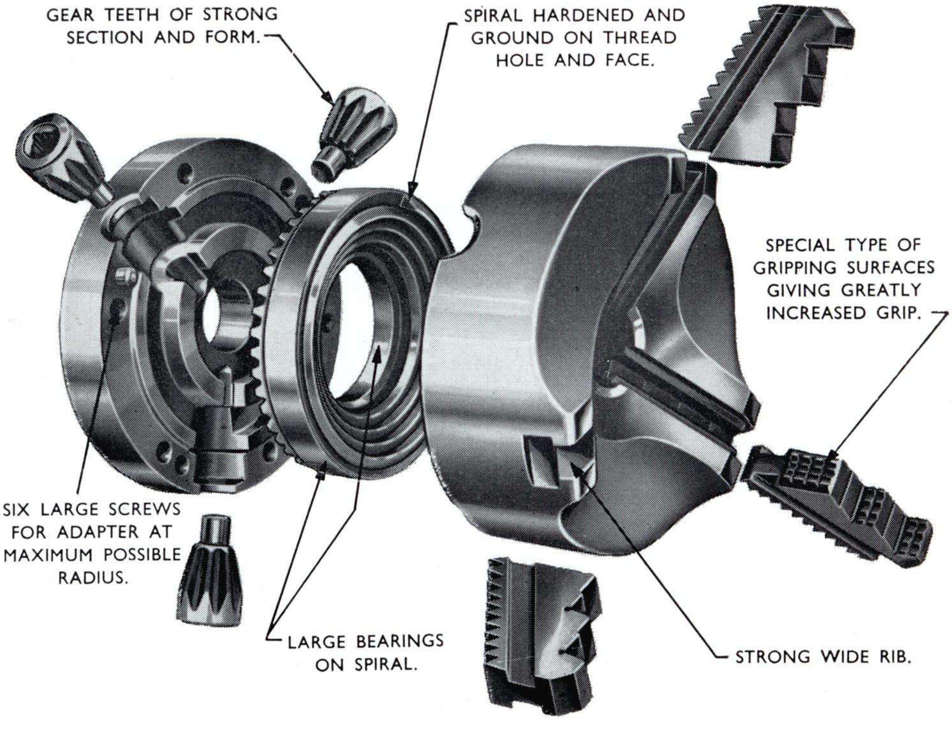
Several models can be mounted directly to HERBERT lathes, other leading types of lathes and American Standard Spindle Noses.

Jaws are of special steel, hardened all over and ground to extreme accuracy on parts which slide in the body and the gripping portions. Three types of jaws can be supplied, for general lathe work and internal gripping. Soft jaw blanks, which are interchangeable with standard jaws can be supplied.

Chuck keys are twice the length of standard keys, giving greater gripping power with less physical effort. Spare parts are available for all Taylor Chucks.

SELF-CENTRING 2-JAW CHUCKS

Two types of jaws can be supplied. The jaws shown in Fig. 13 have tapped holes in both steps for holding false jaws, and those shown in Fig. 24 are hardened steel vee jaws for holding bars or round castings.


GEAR TEETH OF STRONG SECTION AND FORM.
SPIRAL HARDENED AND GROUND ON THREAD HOLE AND FACE.
SPECIAL TYPE OF GRIPPING SURFACES GIVING GREATLY INCREASED GRIP.
SIX LARGE SCREWS FOR ADAPTER AT MAXIMUM POSSIBLE RADIUS.
LARGE BEARINGS ON SPIRAL.
STRONG WIDE RIB.

The Mechanism of a Taylor Chuck

When ordering, the diameter of the chuck and the type of jaws required should be stated.

The mild-steel false jaws may be case hardened after machining. Various sizes are stocked, and if details of gripping problems are sent, recommendations will be given.

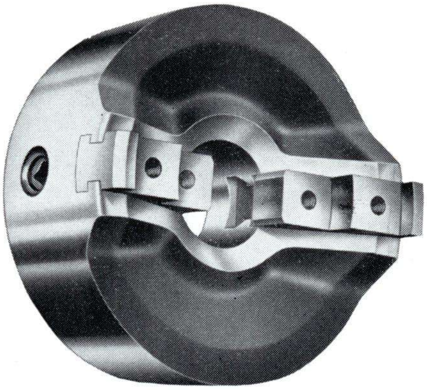


Fig. 13

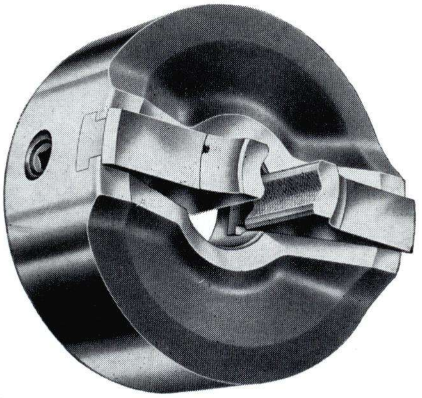


Fig. 24

Specifications:

Diameter of Chuck		5½″	6½″	8½″	10″
Capacity with Fig. 24 Bar Jaws ...	Min.	7/32″	¼″	9/32″	13/32″
	Max.	⅞″	1 3/16″	1¼″	1 13/16″
Diameter of Centre Hole		1¼″	1 11/16″	2½″	2 13/16″
Diameter of Recess at Back of Chuck ...		3⅞″	4 23/32″	6½″	4⅝″
Width of Standard Jaws (13 and 24) ...		1 3/16″	1 15/32″	1 15/32″	1 15/32″
Weight of Chuck with Fig. 24 Jaws ...		15½ lbs.	25 lbs.	46 lbs.	68 lbs.

SELF-CENTRING 3-JAW CHUCKS

In sizes from 4½″ to 20″ diameter; can be fitted with three types of jaws, as illustrated, Fig. 1 for general lathe work, Fig. 2 for bar work and Fig. 552 for internal gripping.

SELF-CENTRING 4-JAW CHUCKS

Four-jaw Self-Centring Chucks are limited in their application, for if the parts to be gripped are not true to shape, the four jaws will not grip instantaneously and the advantage of the self-centring action would be nullified.

Jaws of similar type to those for 3-jaw chucks are available, Fig. 21 for general lathe work, Fig. 22 for bar work and Fig. 654 for internal gripping.

SPECIFICATIONS OF THREE AND FOUR JAW CHUCKS

In the table, standard bore sizes are those as made and stocked. Larger bore sizes can be produced but it is recommended that the bore should be increased no more than absolutely necessary, since jaw support is reduced when holding small components.

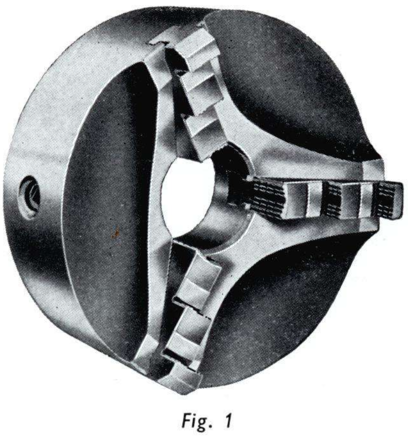


Fig. 1

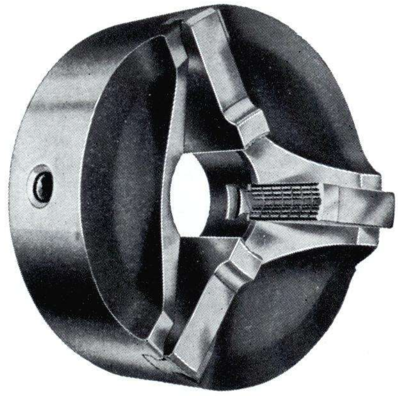


Fig. 2

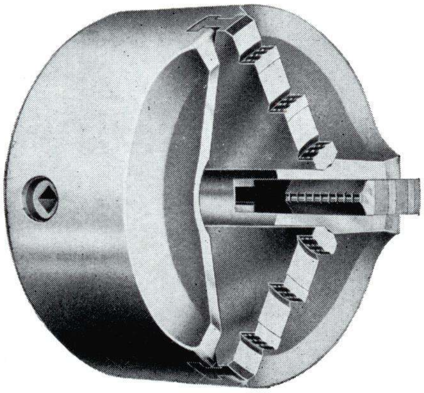


Fig. 552

3-Jaw Chucks

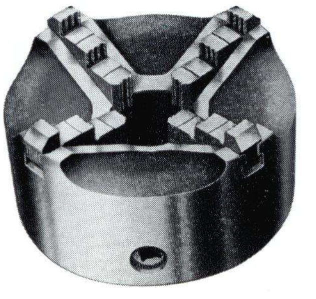


Fig. 21

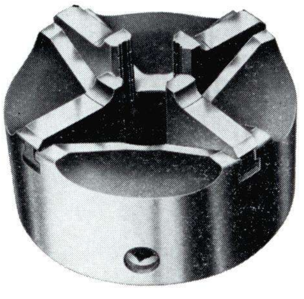


Fig. 22

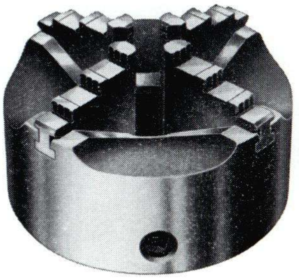
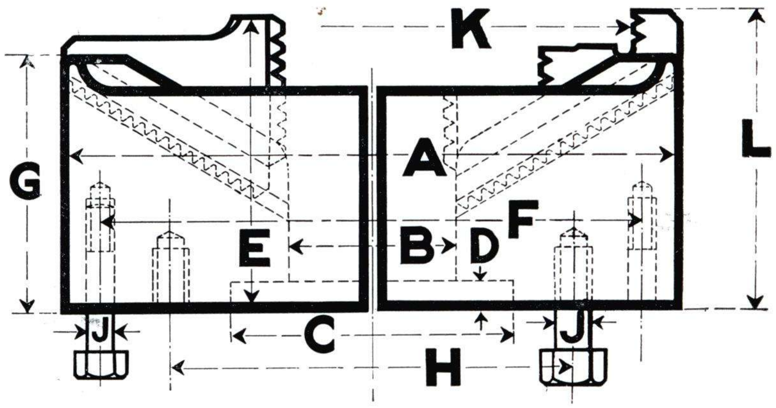


Fig. 654

4-Jaw Chucks

Specifications:



Diameter of Chuck			A	4½″	5½″	6½″	8½″	10″	12″	16″	20″
With Fig. 1 or 21 Jaws	Standard Capacity	Min.	K	3/32″	⅛″	7/16″	9/16″	11/16″	⅞″	15/16″	1″
		Max.		3⅝″	4½″	5⅜″	7⅛″	8¾″	10½″	14″	17⅝″
With Fig. 2 or 22 Jaws		Min.	K	3/32″	⅛″	7/16″	9/16″	11/16″	⅞″	15/16″	1″
		Max.		¾″	1″	1¼″	2⅜″	2 11/16″	3½″	5″	6½″
With Special Small Grip Fig. 2 or 22 Jaws		Min.		—	—	5/32″	3/16″	¼″	⅜″	—	—
With Fig. 552 or 654 Jaws in Bar Grip		Min.		3/32″	⅛″	5/32″	3/16″	¼″	⅜″	15/16″	¾″
		Max.		¾″	1″	1¼″	2⅜″	2 11/16″	3½″	5″	6½″
Standard Bore			B	13/16″	1 1/16″	1 5/16″	2½″	2 13/16″	3⅝″	5½″	7″
Maximum Bore (Extra Charge)				15/16″	1¼″	1⅝″	2⅞″	3⅝″	5⅛″	6⅝″	8⅛″
Diameter of Back Recess			C	3 1/16″	3⅞″	4 23/32″	6½″	4⅝″	6⅛″	9⅜″	11″
Depth of Recess			D	3/32″	3/32″	3/32″	⅛″	⅜″	9/16″	9/16″	3/16″
Max. Distance from Back of Chuck to Top of Fig. 2 Jaws			E	3 7/16″	3 13/16″	4 5/16″	4⅞″	5 7/16″	5⅞″	6⅝″	6¾″
Centres of Body and Adaptor Plate Screw Holes (Sizes 4½″ to 8½″)			F	3¾″	4¾″	5 11/16″	7⅝″	—	—	—	—
Centres of Body and Adaptor Plate Screw Holes (Sizes 10″ to 20″)			H	—	—	—	—	6⅞″	8¾″	12¼″	9⅜″
Depth of Chuck Body			G	2⅞″	3 3/16″	3 11/16″	4 5/32″	4½″	4 13/16″	5 7/32″	5 11/16″
Sizes of Adaptor Screws			J	⅜″	⅜″	⅜″	7/16″	⅝″	⅝″	¾″	¾″
Max. Distance from Back of Chuck to Top of Fig. 1 Jaws ...			L	3 7/16″	3¾″	4¼″	4⅞″	5 5/16″	5⅞″	6⅝″	7″
Weight: 3-jaw with Fig. 2 Jaws				9¼ lbs.	14½ lbs.	23 lbs.	43 lbs.	68 lbs.	100 lbs.	187 lbs.	250 lbs.
4-jaw with Fig. 22 Jaws				10 lbs.	15 lbs.	24 lbs.	45 lbs.	71 lbs.	105 lbs.	190 lbs.	290 lbs.

BURNERD 'GRIPTRU' PRECISION CHUCKS

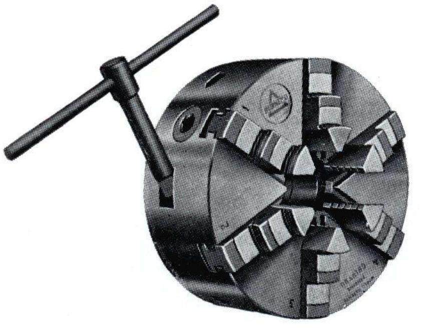
An instant micro-adjustment system is incorporated in these chucks; concentricity adjusted within ·0002" total indicator reading. The accuracy will be maintained throughout repetition machining. The mechanism is capable of withstanding the stresses and strains to which lathe chucks are normally subjected.

Bodies are of high-tensile, alloy iron. The heat-treated, alloy-steel forgings, from which the scrolls are machined have a tensile strength of 145,000/155,000 lbs. per square inch. Pinions are of nickel steel, accurately machined and case-hardened for strength. Case-hardened steel jaws have well-proportioned guides, and all bearing and gripping surfaces are precision ground.

Whilst "Griptru" chucks can be mounted on any backplate, the Burnerd double-bossed backplate reduces overhang to the minimum.

All "Griptru" chucks are supplied with two sets of hard jaws, dual-purpose key and backplate fixing bolts where applicable.

3-Jaw 'Griptru' Chuck.



6-Jaw 'Griptru' Chuck.

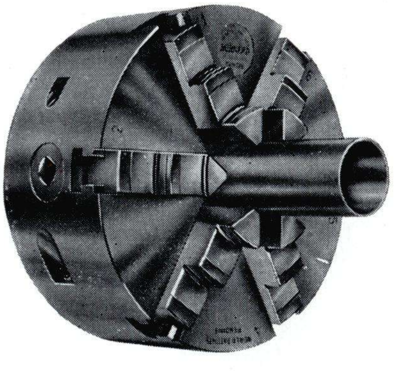
3-JAW 'GRIPTRU' CHUCKS

Ideal for all machining operations for which the orthodox chucks are used, these chucks can also be employed where ordinary chucks prove inadequate. The high accuracy and the wide range of diameters that can be held enable substantial savings to be effected on operations usually requiring special holding devices, stub arbors, mandrels, etc.

These chucks can be supplied for mounting with a backplate or to suit American Standard Spindle Noses.

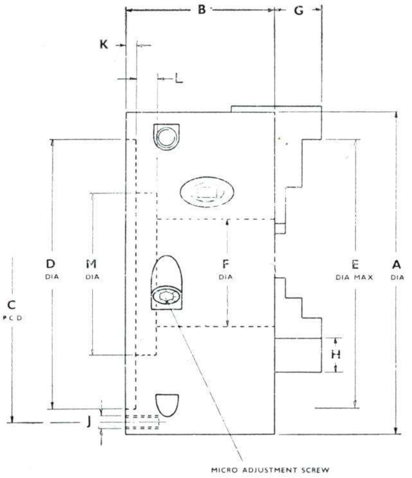
6-JAW 'GRIPTRU' CHUCKS

Work can be centred more rapidly without misalignment using a 6-jaw chuck. Soft metals may be firmly gripped without marking; fragile components such as rings and tubes, held securely with less pressure and without distortion. Where extremely close tolerances are essential, these chucks are indispensible.



Thin-walled component held without crushing or slipping.

SPECIFICATIONS OF 3 & 6-JAW CHUCKS FOR BACKPLATE MOUNTING



'Griptru' Chuck to suit American Type L. Long Taper Spindle Nose

Chuck Sizes	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*M*
3 1/4″*	3 1/4″	2 1/32″	2 13/16″	2 1/2″	3 1/4″	3/4″	5/8″	3/8″	10–24 UNC	5/64″	·352″	1·50″
4″*	4″	2 1/8″	3 1/2″	3″	4 3/16	1″	11/16″	9/16″	1/4″–20 UNC	3/32″	·25″	2·00″
5″	5 1/8″	2 19/32″	4 1/2″	4″	5 1/4″	1 1/2″	29/32″	5/8″	1/4″–20 UNC	1/8″	·468″	2·625″
6″	6 1/16″	2 21/32″	5 1/2″	5″	6 1/4″	1 7/8″	29/32″	3/4″	5/16″–18 UNC	1/8″	·318″	3·00″
8″	8 1/4″	3 1/2″	7 3/8″	6 1/2″	8″	2″	1 5/16″	1″	3/8″–16 UNC	1/8″	11/16″	3 15/16″
10 1/2″	10 3/4″	4 1/16″	9 3/4″	8 7/8″	11″	3″	1 27/32″	1 1/4″	3/8″–16 UNC	3/16″	11/16″	5 1/2″
12″	12 1/8″	4 5/16″	11 1/8″	10 1/4″	12 3/8″	3 1/8″	1 27/32″	1 1/4″	7/16″–14 UNC	1/4″	3/4″	5 7/8″

*These models are only supplied in the 3-jaw type. Dimensions of models for mounting on American Standard Spindle Noses vary slightly from those listed above. Further details of these or other Burnerd Chucks may be obtained upon request.

To suit Type D1 Camlock.

MODELS FOR MOUNTING WITH BACKPLATE

3-Jaw Model No.	*6-Jaw Model No.*	*Chuck Size*	*Weight (3-Jaw)*	*Weight (6-Jaw)*	*Bore Size*
129	—	3 1/4″	4 1/2 lbs.	—	3/4″
130	—	4″	6 3/4 lbs.	—	1″
130A	130AZ	5″	14 lbs.	15 3/4 lbs.	1 1/2″
131	131Z	6″	19 lbs.	21 1/2 lbs.	1 7/8″
151	151Z	8″	43 lbs.	47 lbs.	2″
154	154Z	10 1/2″	85 lbs.	91 lbs.	3″
155	155Z	12″	125 lbs.	129 lbs.	3 1/8″

Models are available for direct mounting on American Standard Spindle Noses, Type L—Long Taper and Type D1—Camlock.

JACOBS SPINDLE NOSE LATHE CHUCKS WITH RUBBERFLEX COLLETS

Give twice to four times the gripping power of more conventional types, allowing maximum feeds and speeds to be used with complete safety. Rapid stopping or reversing cannot force the chuck to open. Accuracy is unsurpassed.

The handwheel of the model 91 is solid aluminium, the body is forged alloy steel, hardened and ground, and all other parts of the chuck are of alloy steel, hardened and ground. Overhang is reduced to a minimum, permitting chucking close to the spindle nose.

A set of eleven rubber-flex collets enables any bar between 1/16″ and 1 3/8″ to be held, eliminating the necessity of keeping separate collets for very small differences in bar size. The full spindle hole diameter can be used, increasing the bar capacity of the lathe. All external and internal collet surfaces are precision ground, and the rubber is moulded to form a complete seal against the ingress of foreign matter. The Hycar synthetic rubber, manufactured and moulded by Jacobs, is not affected by heat, coolants, or cutting compounds.

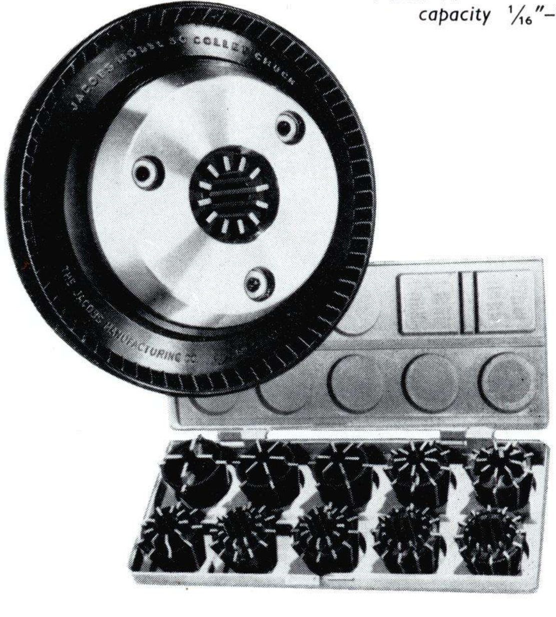
The cone bearing surfaces of the jaws distribute the grip equally throughout the collet and do not allow concentration at the nose as happens when steel collets are closed below normal diameter.

Model 91—
capacity 1/16″–1 3/8″.

FOR THE SMALLER LATHE

The new Model 50 Chuck has been developed especially to allow the use of Jacobs rubber-flex collets on the smaller lathes which are in such wide use today. All the advantages of grip and accuracy inherent in the original rubber-flex collet are thus available to a much wider field of users.

Each Model 50 Collet covers a range of ·100″ and the specially designed Chuck makes tightening and collet changing an extremely simple matter. The standard set of ten collets covers the capacity range 3/32″ to 1 1/16″.



Model 50 Collet Chuck, capacity 3/32″ to 1 1/16″ using the boxed set of 10 collets shown.

Adaptation is possible to American Standard Spindle Noses and Threaded spindles.

Hexagon and square collets are available for use on lathes having a spindle bore of 1 3/8″ diameter or larger.

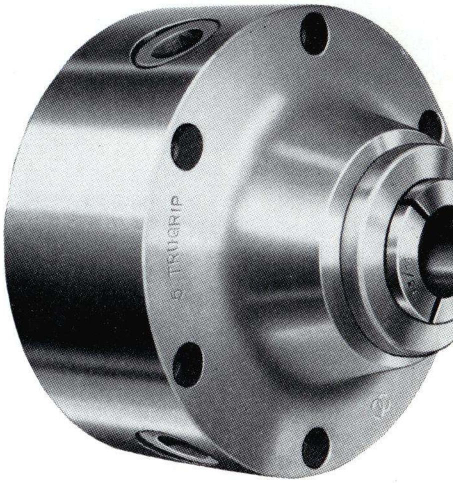
CRAWFORD 'TRUGRIP' COLLET CHUCKS

Ideal for second-operation work on centre lathes and grinders, work is instantly held true to an accuracy of ·001″ per inch from the collet face. Uniform gripping entirely eliminates distortion, and the collets will not score or mark previously machined surfaces. Operation of the chuck is by means of a key.

The elimination of drawtube and sleeve enables the full bore of the machine spindle to be used. Further increase in capacity may be obtained by the use of outsize collets.

The highest accuracy is obtained by machining the backplate on the machine to which the chuck is to be fitted.

Two sizes of 'Trugrip' chucks are available: 5″ and 7″ diameter, having capacities of 1″ and 2″ respectively. Chuck dimensions are given on page 56.



Specifications:

Model	5″	7″
Collet capacity round ...	1/32″–1″	1/16″–2″
Collet capacity hexagon ...	1/4″–7/8″ A/F	1/2″–1 3/4″ A/F
Collet capacity square ...	1/4″–11/16″ A/F	1/2″–1 3/8″ A/F
Weight including Collet ...	10 1/4 lbs.	28 1/2 lbs.

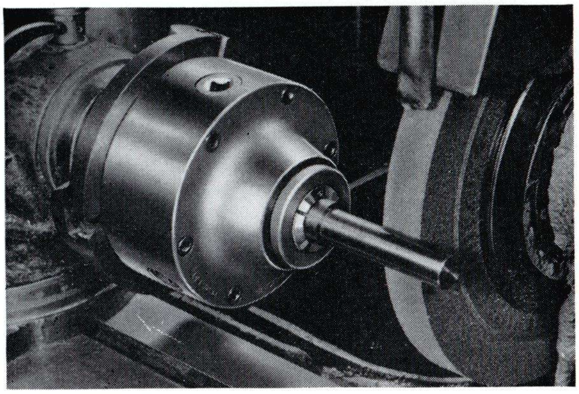
COLLETS FOR 'TRUGRIP' CHUCKS

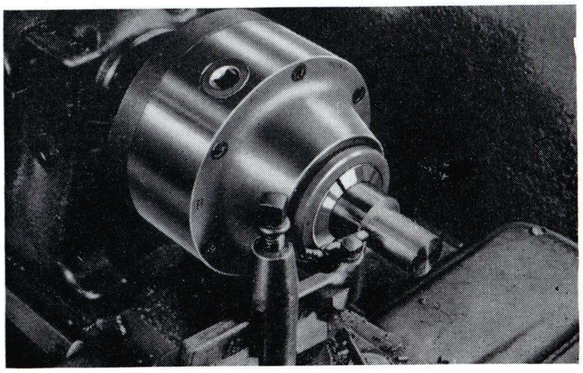
Standard round, square and hexagon bore collets are supplied to the capacities listed. Oversize head collets for use with a standard sleeve are available in sizes up to 2 1/2″ dia. × 3/8″ deep for the 5″ model, and up to 3″ dia. × 1/2″ deep for the 7″ model.

Stepped ring and disc collets can be supplied to the standard sizes listed below, or as a soft blank which the customer may machine to individual requirements. A sleeve is required for these collets.

Expanding mandrels are supplied to any specific size within the ranges 3/4″ to 2 1/2″ dia. for 5″ chucks, and 1″ to 4″ dia. for 7″ chucks. When ordering, the length of the mandrel and the actual permissible bore tolerance should be stated. There is also a range which is recommended for use when the bore size is likely to vary slightly.

Accessories for expanding mandrels are Expander, Expander Bolt and Mandrel Expander Nut. When ordering an Expanding Mandrel it is always advisable to order a complete set.





DISC AND RING COLLETS FOR 5″ MODEL

Disc Collet No.	1	2	3	4
	2 1/4″	2 5/16″	2 3/8″	2 7/16″
	2 1/2″	2 9/16″	2 5/8″	2 11/16″
Step Diameters	2 3/4″	2 13/16″	2 7/8″	2 15/16″
	3″	3 1/16″	3 1/8″	3 3/16″
Depth and Width of Steps — 1/8″	3 1/4″	3 5/16″	3 3/8″	3 7/16″
	3 1/2″	—	—	—

CRAWFORD HYDRAULIC CHUCKS

For use with Multibore collets, this powerful, key-operated, dead-length chuck is particularly suitable for bar and second-operation work. The self-contained hydraulic system provides an exceptionally strong grip. Wear is negligible and maintenance reduced to a minimum by the use of a system containing the minimum number of moving parts. The grip is spread completely around the bearing surface, eliminating distortion, slip and scoring.

Two models are available, 1½″ and 2″ capacity. The former uses 10 Multibore collets from ¼″ to 1½″ dia., and the latter 14 collets from ¼″ to 2″ dia.

By using a Crawford patented rear support stop, extremely short workpieces can be held with consistent accuracy.

Chuck dimensions are on page 56.

Specifications:

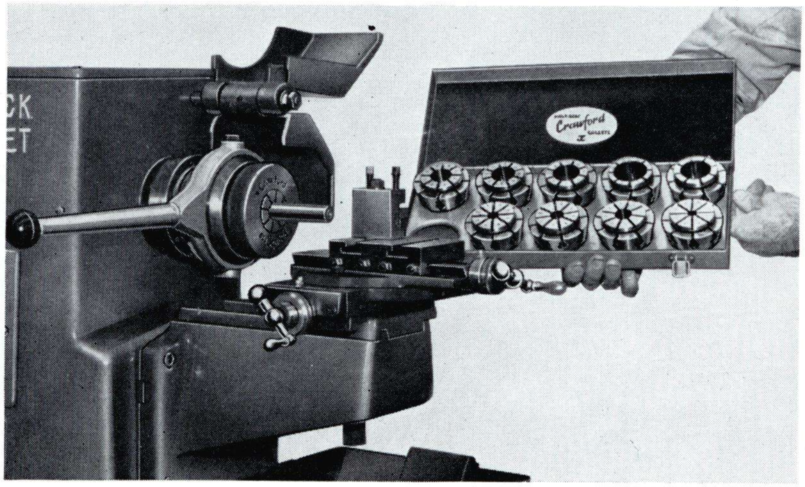
Weight: 1½″ Capacity, 18½ lbs.
2″ Capacity, 35 lbs.

CRAWFORD 'RAPIDGRIP' CHUCKS

An exceptionally powerful and true, lever-operated chuck, using Multibore collets. Employed on bar work or, when fitted with a Crawford patented rear support stop, exceptionally short pieces may be held. In addition to the standard mounting, direct-mounting types may be supplied upon request.

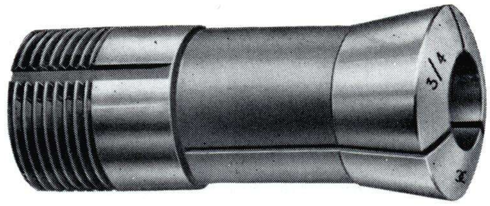
Two sizes are available, 1″ and 1½″ capacity, and the Multibore collets used enable any size within the individual collet limits to be held with consistent accuracy. Eight collets on the 1″ capacity model cover a range $\frac{1}{16}$″–1″ and ten on the 1½″ capacity model ¼″–1½″.

Chuck dimensions are on page 56.

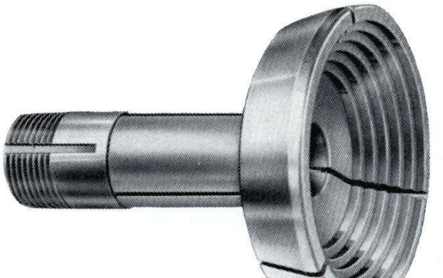


A 'Rapidgrip' Chuck with a boxed set of Multibore Collets on an Edgwick Whippet Lathe.

Ring Collet No.	1	2	3	4
	3/4″	13/16″	7/8″	15/16″
	1″	1 1/16″	1 1/8″	1 3/16″
	1 1/4″	1 5/16″	1 3/8″	1 7/16″
Step Diameters	1 1/2″	1 9/16″	1 5/8″	1 11/16″
	1 3/4″	1 13/16″	1 7/8″	1 15/16″
Depth and Width of Steps — 1/8″	2″	2 1/16″	2 1/8″	2 3/16″
	2 1/4″	2 5/16″	2 3/8″	2 7/16″
	2 1/2″	2 9/16″	2 5/8″	2 11/16″
	2 3/4″	2 13/16″	2 7/8″	2 15/16″
	3″	3 1/16″	3 1/8″	3 3/16″
	3 1/4″	3 5/16″	3 3/8″	3 7/16″
	3 1/2″			



Standard Collet

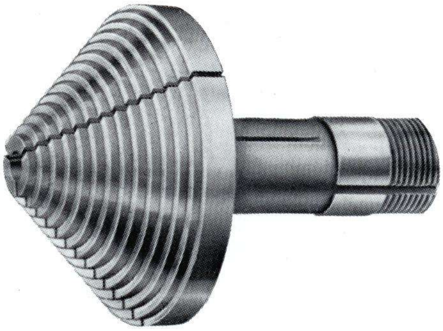


Disc Collet

DISC AND RING COLLETS FOR 7″ MODEL

Disc Collet No.	1	2	3	4
(Use Collet Sleeve 7/2)	2 1/16″	2 1/8″	2 3/16″	2 1/4″
	2 5/16″	2 3/8″	2 7/16″	2 1/2″
Step Diameters	2 9/16″	2 5/8″	2 11/16″	2 3/4″
Depth and Width of Steps—1/8″	2 13/16″	2 7/8″	2 15/16″	3″
	3 1/16″	3 1/8″	3 3/16″	3 1/4″
	3 5/16″	3 3/8″	3 7/16″	3 1/2″

Disc Collet No.	5	6	7	8
(Use Collet Sleeve 7/13)	3 9/16″	3 5/8″	3 11/16″	3 3/4″
	3 13/16″	3 7/8″	3 15/16″	4″
Step Diameters	4 1/16″	4 1/8″	4 3/16″	4 1/4″
Depth and Width of Steps—1/8″	4 5/16″	4 3/8″	4 7/16″	4 1/2″
	4 9/16″	4 5/8″	4 11/16″	4 3/4″
	4 13/16″	4 7/8″	4 15/16″	5″

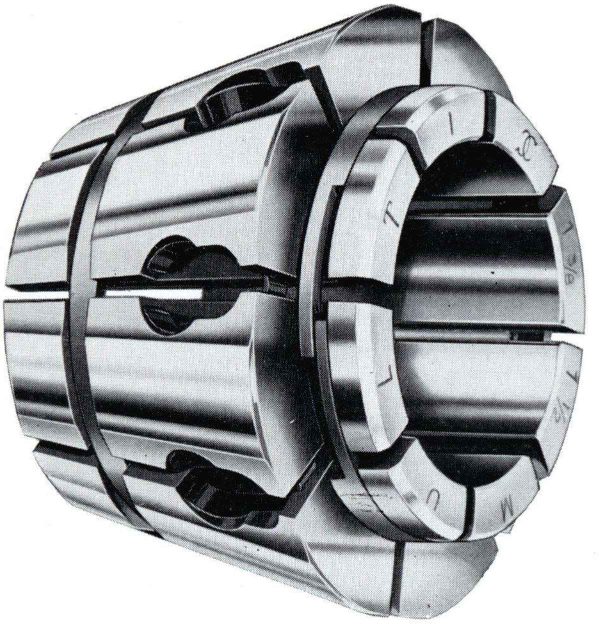


Ring Collet

Ring Collet No.	1	2	3	4
	2 1/4″	2 5/16″	2 3/8″	2 7/16″
Step Diameters	2 1/2″	2 9/16″	2 5/8″	2 11/16″
Depth and Width of Steps—1/8″	2 3/4″	2 13/16″	2 7/8″	2 15/16″
	3″	3 1/16″	3 1/8″	3 3/16″
	3 1/4″	3 5/16″	3 3/8″	3 7/16″
	3 1/2″	3 9/16″	3 5/8″	3 11/16″
	3 3/4″	3 13/16″	3 7/8″	3 15/16″
	4″	4 1/16″	4 1/8″	4 3/16″
	4 1/4″	4 5/16″	4 3/8″	4 7/16″
	4 1/2″	4 9/16″	4 5/8″	4 11/16″
	4 3/4″	4 13/16″	4 7/8″	4 15/16″
	5″	—	—	—

Expanding Mandrel

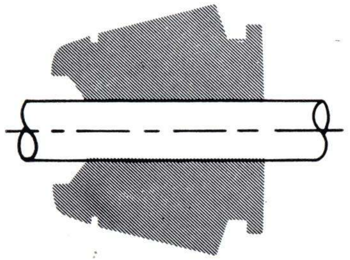
CRAWFORD MULTIBORE COLLETS



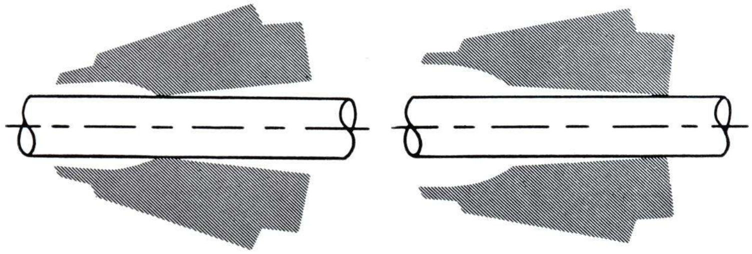
The most important feature of Multibore collets is that each has size range limits of $\frac{1}{8}$″, replacing at least ten of the more conventional collets. Each collet consists of a set of precision-ground, hardened steel jaws radially located around a set of steel springs. Jaw closure is parallel to the workpiece, spreading the grip over the entire bearing surface. This is particularly valuable when machining soft alloys or thin-walled tubes.

Collets are available in sets for each Hydraulic and 'Rapidgrip' chuck, packed in boxes which can be mounted within easy reach of the operator. Single collets may be obtained. Multibore collets are also available to hold square and hexagonal bar. A hexagon collet will grip a complete spanner size range; for example, from 0·720″ A F to 0·820″ A F.

Further details on Multibore collets or any Crawford chucks, etc., may be obtained upon request.



The Multibore Collet grips evenly and accurately along the length of the workpiece throughout its entire range of diameters.



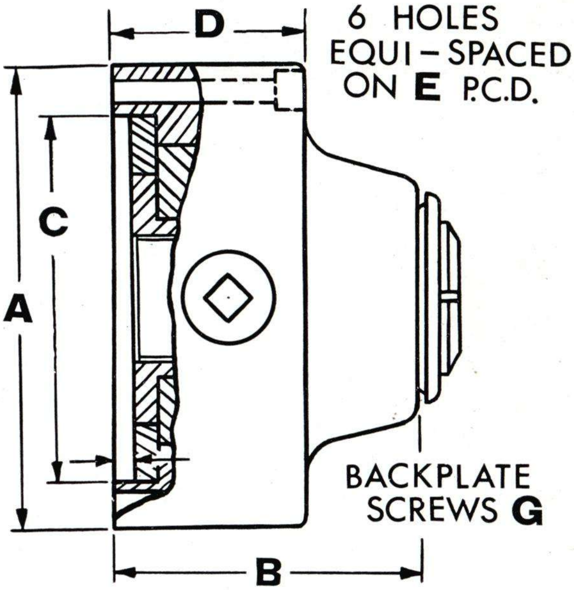
Conventional collets only grip at one end of the workpiece if variations in size occur, the rear on oversize stock and the front on undersize.

The Crawford Patent Rear Support Stop supports the rear of the collet at the required bore size, enabling short pieces to be accurately held. ▶

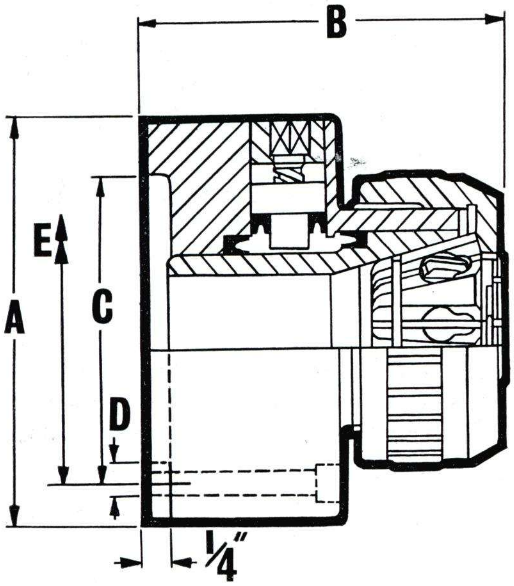
SPECIFICATIONS OF CRAWFORD COLLET CHUCKS

‘TRUGRIP’ CHUCKS

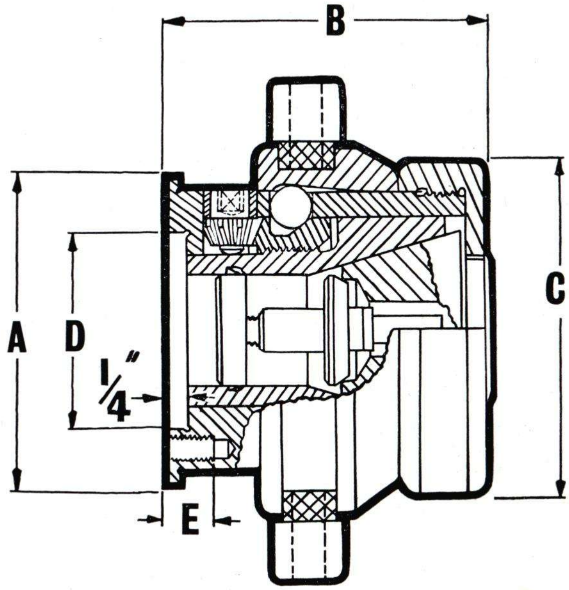
Model	A	B	C	D	E	G
5″	5 1/16″	3 5/16″	4″ +·001″ +·002″	2 1/8″	4 7/16″	5/16″ B.S.F.
7″	7 7/16″	4 9/16″	5 3/4″ +·001″ +·002″	2 5/8″	6 1/4″	3/8″ B.S.F.



HYDRAULIC CHUCKS



Capacity	A	B	C	D	E	Weight
1 1/2″	6″	4″	4″	11/32″	4 7/8″	18 1/2 lbs.
2″	6 7/8″	4 1/2″	5″	13/32″	5 7/8″	35 lbs.



‘RAPIDGRIP’ CHUCKS

Capacity	A	B	C	D	E	Weight (without lever)
1″	3·65″	3 1/8″	3 7/16″	2″	1/2″	6 1/4 lbs.
1 1/2″	4 1/16″	4 3/8″	4 7/16″	2 3/4″	5/8″	16 lbs.

HYDRAJAWS

Any production planning engineer appreciates the difficulty of clamping irregular-shaped components or a number of small components using conventional methods. Invariably, the conventional vices and clamps can be adapted to this purpose, but such methods are usually time-consuming and without any uniformity in clamping pressure. Larrad Hydrajaws, a range of Hydraulic vice-jaws and Hydraulic clamping fixtures, eliminate practically all the limitations to which conventional methods are subject.

Units are of simple construction and employ the application of the well-known principle that pressure applied to a liquid is uniformly distributed. In essence, they consist of mild-steel blocks which are suitable for insertion into the machine vice and having a series of protruding plungers with which the workpiece is gripped. The interconnected spaces behind the plungers are filled with hydraulic oil, so that as the vice closes, each plunger adjusts itself to the contour of the workpiece and exerts an equal pressure when the vice is fully tightened. The clamping effort of each plunger, when the vice is moderately tightened, greatly exceeds that supplied by the vice alone.

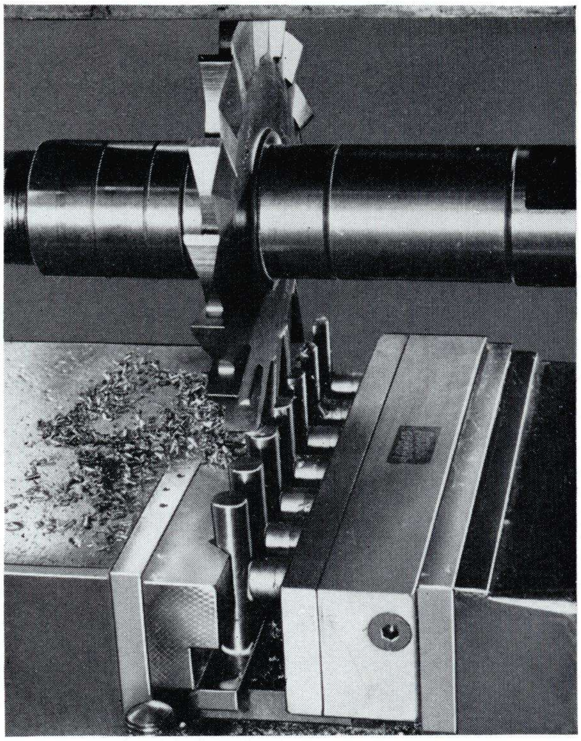
Special fixtures and clamping methods can be supplied, always improving production times and the quality of the finished product.

The extreme clamping pressures which the Hydrajaw is capable of exerting, obviate the necessity for end stops, when machining towards the open end of the vice or fixture. Before Hydrajaws came into use, the number of components that could be machined simultaneously was usually dependent upon the number of cutters which could be ganged on the machine spindle. Now, one cutter can be used to machine as many components as can be accommodated over the length of the Hydrajaw.

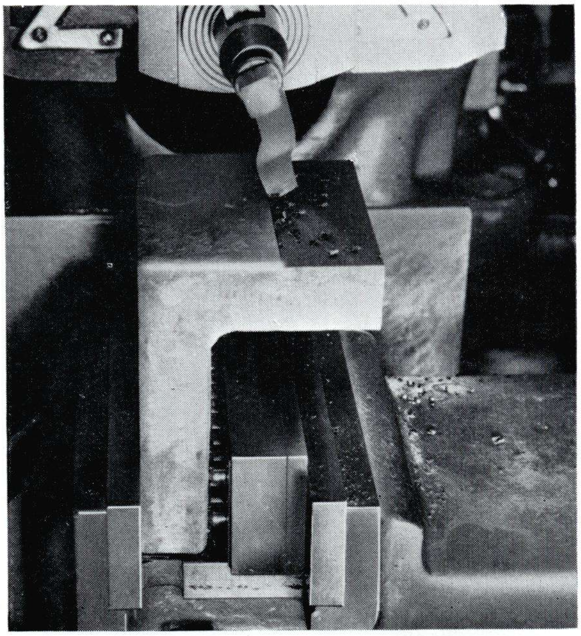
PLUNGERS

Various types of plunger head can be supplied for all Standard Model Hydrajaws:—

Flat: Steel, brass or nylon. Domed: Steel or brass. Serrated: Steel or brass. Vee: Steel. Conical: Steel.



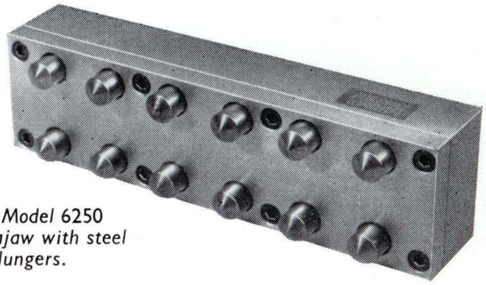
Standard Model 6175 VV/BP Hydrajaw and Vee Backplate holding seven round section components during a milling operation.



Standard Model 6250 DP Hydrajaw used in a shaping machine vice to hold a C.I. Angle casting.

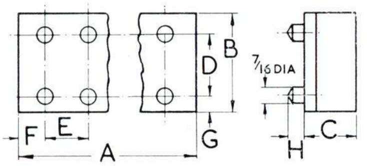
STANDARD HYDRAJAWS

A range of eight standard Hydrajaws is available with a choice of six types of plunger head. Some models are supplied with matching multiple vee-blocks, suitable for holding multiple small components, or having vee-blocks with a single horizontal vee.

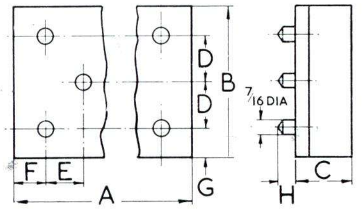


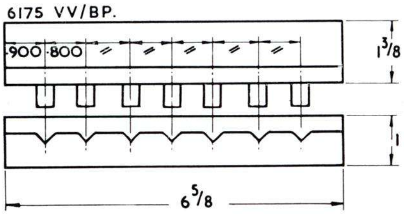
Standard Model 6250 DP Hydrajaw with steel conical plungers.

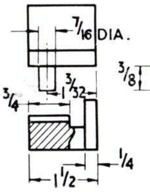
Specifications:

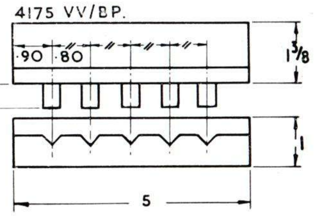


Model	*No. of Plungers*	*No. of Rows*	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
6250 DP	12	2	7″	2″	1⅜″	1¼″	1·05″	⅞″	⅜″	⅜″
8250 DP	14	2	9″	2¼″	1⅜″	1½″	1·2″	0·9″	⅜″	⅜″
1030 DP	14	2	11″	3″	1 7/16″	1¾″	1½″	1″	⅝″	5/16″
1240 DP	17	3	12″	4″	1 7/16″	1⅜″	1″	1″	⅝″	5/16″



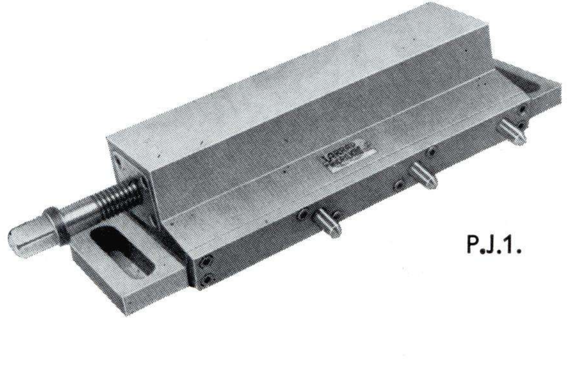






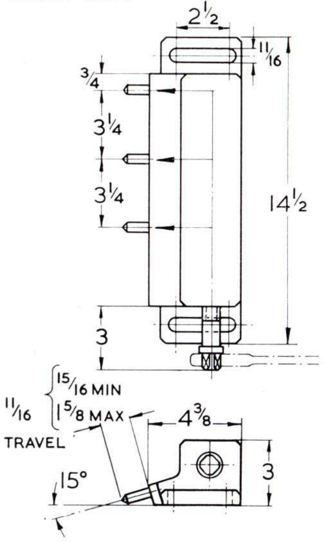
PLANER HYDRAJAWS

Specifically for use on Planing Machines, Heavy-Duty Milling Machines and large Shaping Machines, these units are offered in two styles, P.J.1 and P.J.3. Each unit has three spiking down plungers. These are operated by a screw which actuates an internal piston and causes the plungers to move in or out. Maximum plunger travel is 11/16″, slots in the securing lugs allow adjustment of the unit prior to actuation of the plungers.

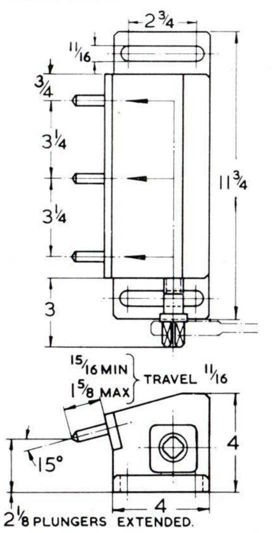


P.J.1.

Model P.J.1

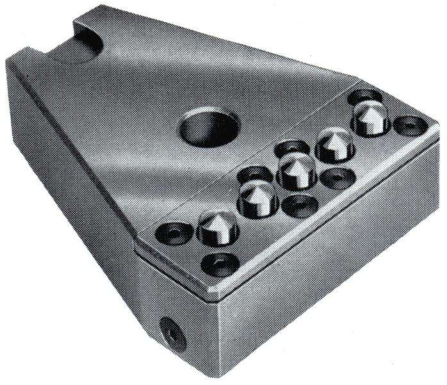


Model P.J.3



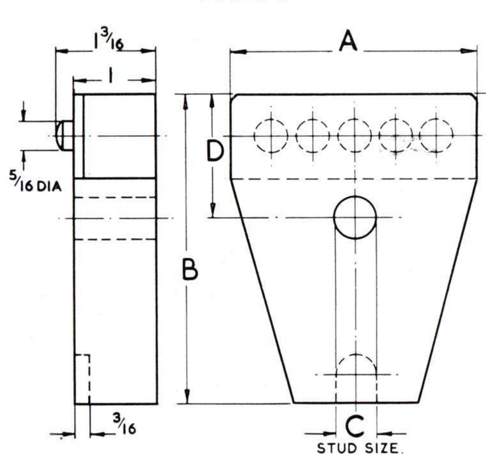
HYDRAJAW CLAMPS

The same principle of operation as used on Standard Hydrajaws is applied to this range of twelve clamps, which resemble in appearance the conventional, solid, jig-and-fixture clamps. Clamping plungers replace the solid clamping surface, giving full compensation for any surface irregularities in the component to be held. Spherical seatings and washers are completely unnecessary when Hydrajaws clamps are used. Two types of clamp are available, Type S which has a plain hole and Type W which has a slot. Standard pitch of plungers is ½″.

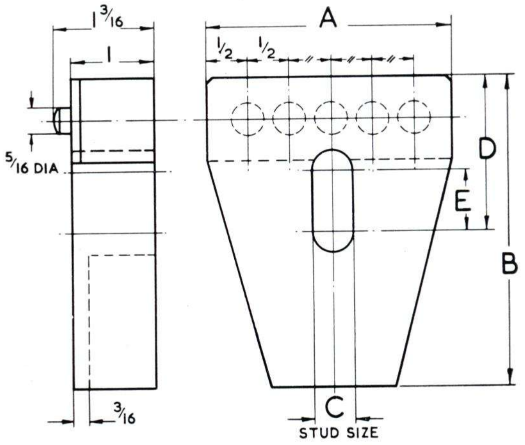


Specifications:

TYPE S



TYPE W



Model	*No. of Plungers*	*A*	*B*	*C*	*D*
6–35	3	2″	3¾″	½″	1½″
6–45	4	2½″	3¾″	½″	1½″
6–55	5	3″	3¾″	½″	1½″
6–75	7	4″	5″	⅝″	1⅞″
6–95	9	5″	5″	⅝″	1⅞″
6–11S	11	6″	5¾″	⅝″	2¼″

Model	*No. of Plungers*	*A*	*B*	*C*	*D*	*E*
6– 3W	3	2″	3¾″	½″	1⅞″	¾″
6– 4W	4	2½″	3¾″	½″	1⅞″	¾″
6– 5W	5	3″	3¾″	½″	1⅞″	¾″
6– 7W	7	4″	5″	⅝″	2⅜″	1″
6– 9W	9	5″	5″	⅝″	2⅜″	1″
6–11W	11	6″	5¾″	⅝″	2¾″	1″

HYDRAMANDRELS

The principle of Hydrajaw equipment is used in the design and manufacture of a variety of hydraulic mandrels. In all cases, Hydramandrels are made as 'specials' to suit customers' specific requirements, and have proved very efficient and time-saving in a number of production applications.

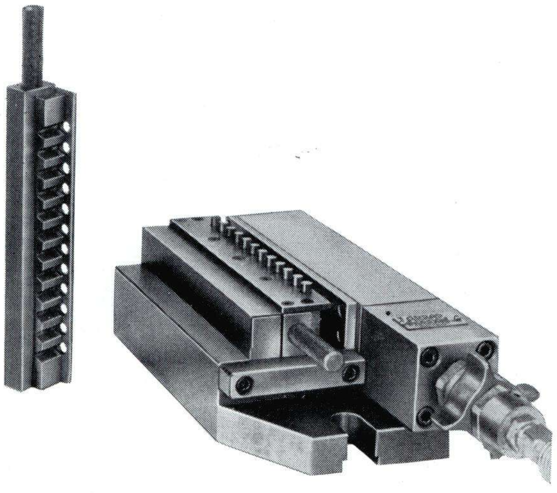
Hydramandrels can be designed for use on multi-spindle automatic machines actuated through the draw-bar, as stub mandrels, or for use between centres. They can also be incorporated in Fixture design where central location from the bore of the component is desirable.

A centralising device can be incorporated in most Hydramandrels having a body diameter of 2″ or larger.

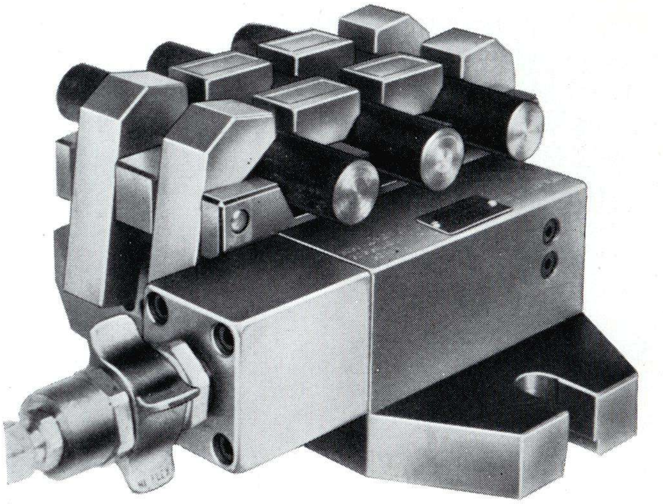
TYPICAL EXAMPLES OF SPECIAL HYDRAJAW FIXTURES

Designed to suit a customer's specific requirements, the Hydrajaw Fixture shown holds three shafts, which can vary in length, whilst a keyway is milled the full length of the shafts. The shafts are secured by pull-down clamps and hinged clamps, all of which are actuated by hydraulic plungers. Variation in diameter of components is of no consequence.

Instead of using a ratchet spanner for actuation, a high-pressure hose is coupled to the Fixture from a booster. A self-sealing coupling is used, enabling the hose to be disconnected from the Fixture without the loss of oil.

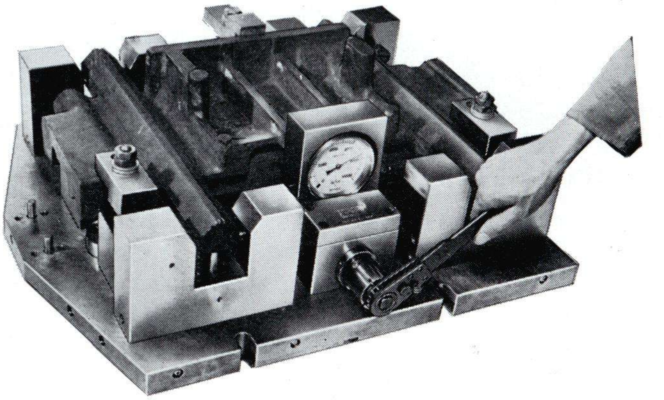


A Hydrajaw Milling Fixture designed to hold the casting of a grinding machine cross-slide. In one pass of a gang of cutters, the two Vee slideways, end faces and various bosses are machined. The component is loaded on to three fixed adjustable stops and a series of spring-loaded supports. Three downward-acting clamps hold the casting down, and it is gripped by hydraulic plungers. The clamps are actuated by hydraulic heel pins and all spring-loaded supports are locked in position by hydraulic plungers. clamping is by means of a ratchet spanner, and a guage incorporated in the Fixture gives the operator a very accurate indication of the clamping force being used. A clamping pressure of 8,000 p.s.i. is readily obtainable.



This Hydrajaw Fixture holds small-diameter components during milling either of slots or end faces. Twelve components are pre-loaded into a magazine which is itself loaded into the fixture. Each piece is clamped into a hardened vee by an individual plunger. Actuation is by a direct high-pressure linkage between booster and Fixture. A self-sealing coupling is incorporated.

Similar Fixtures holding two rows of twelve components are being widely used, magazine loading being possible in almost all cases, thereby effecting a great saving in production time. In all cases, two magazines per component are supplied.



CLAYTON HYDRAJAW BOOSTERS

Produced by Clayton Dewandre who have vast experience in Air/Hydraulic Braking Units, Boosters are now offered as a means of increasing production and efficiency in many varied applications.

In conjunction with the extensive range of Hydrajaw Equipment, they offer to industry an entirely new solution to the problems and complexities experienced in the design and manufacture of high-production Work-Holding Equipment.

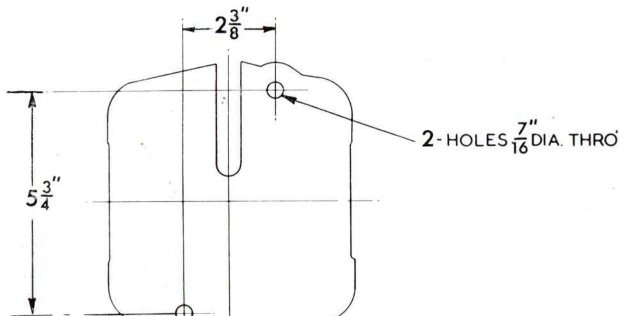
Boosters are available in two types, each type in three models.

Standard Equipment comprises Air Control and Non-Return Valve Assembly and Pressure Hose as follows:— Air Supply to Control Valve—10 ft.; Control Valve to Boosters—4 ft.; High Pressure Output Hose from Boosters—5 ft.

Alternative lengths of Pressure Hose can be supplied at extra cost.

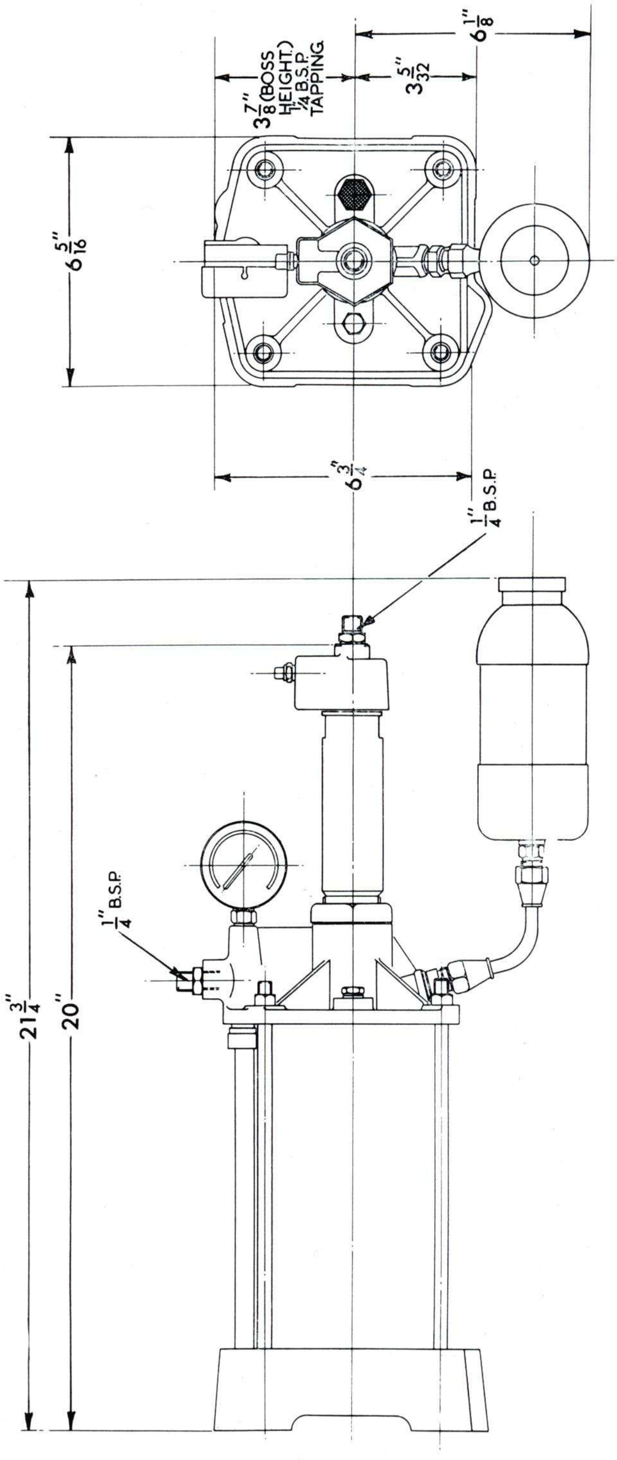
Capacities

Model	*Oil Dis. cu. in.*	*Air Cyl. Dia.*	*Hyd. Cyl. Dia.*	*Max. Press. at 80 p.s.i.*
AOS1	6·23	4·5″	1·125″	1220
AOS2	4·9	4·5″	1·000″	1560
AOS3	3·75	4·5″	·875″	2000



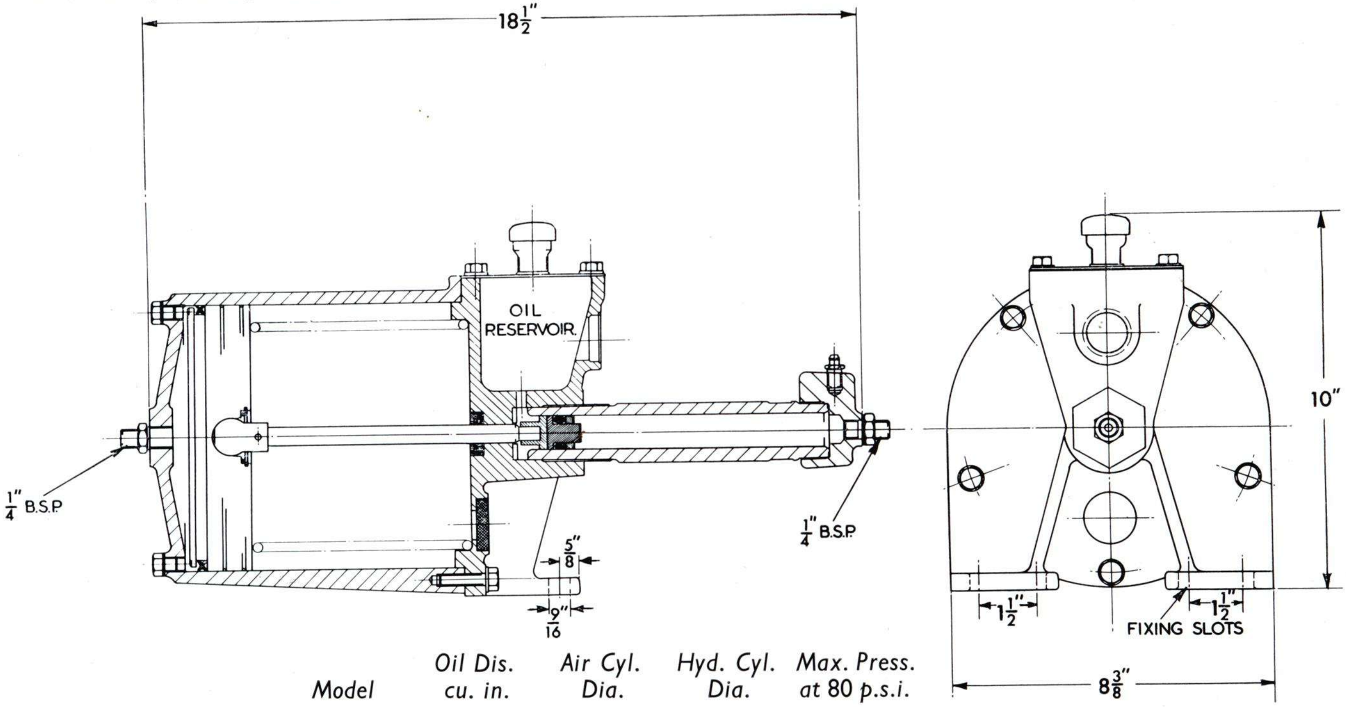
SECTION SHOWING FIXING HOLES IN BASE.

MODELS AOS1, AOS2, AOS3



CLAYTON HYDRAJAW BOOSTERS contd.

TYPES AOS4, AOS5, AOS6



Model	*Oil Dis. cu. in.*	*Air Cyl. Dia.*	*Hyd. Cyl. Dia.*	*Max. Press. at 80 p.s.i.*
AOS4	5·00	7·000″	1·125″	2786
AOS5	3·90	7·000″	1·000″	3500
AOS6	3·00	7·000″	·875″	4600

HYDRAJAW CLAMPING HEADS

These new heads enable jig and tool designers to incorporate the advantages of hydraulic clamping into fixture design. They are available in nine variations, which cover method of mounting and power of ram. Combined with the six models of Clayton-Hydrajaw Boosters, this gives an infinite range of ram thrust and oil displacement.

Heads have been designed primarily for use with Boosters, but can also be used with other forms of intensifier or hand pump.

Being completely interchangeable, heads need not be discarded when a jig or fixture becomes obsolete.

To determine the number of heads which can be operated from a particular Booster, the following formula should be applied.

$$N = \frac{D}{A \times S}$$

where N = No. of heads
D = Booster displacement
A = area of ram
S = Stroke of ram required.

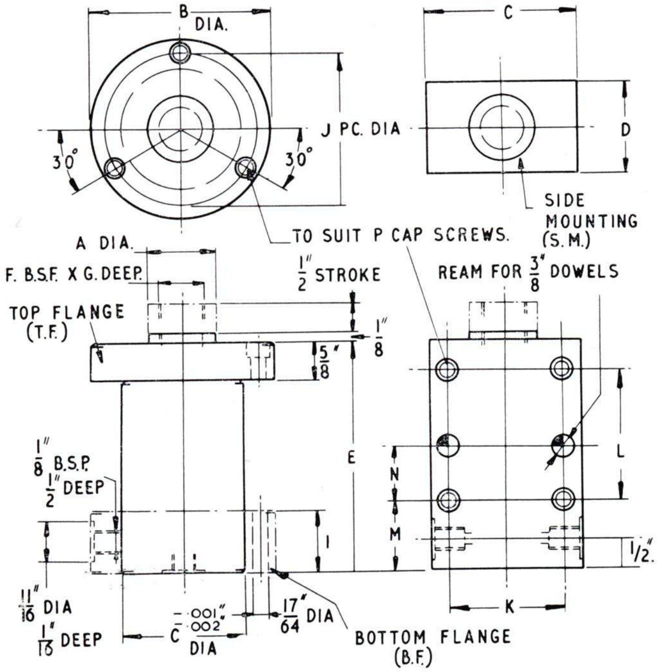
When a displacement greater than the capacity of one Booster is required, two or more boosters can be linked together.

Individual units are self-contained, and are sealed to prevent the ingress of dust and swarf.

The end of the ram nose is hardened, and is tapped to enable the fitment of various end-pieces. The ram is prevented from turning, and a dead stop is incorporated to enable the ram to be actuated even when it may not contact a workpiece.

Ancillary equipment such as high-pressure hose, seals and pipe fittings is available.

HYDRAJAW CLAMPING HEADS contd.



Specifications:

Model	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*J*	*K*	*L*	*M*	*N*	*P*	*Vol. Fluid Displaced for Max. Stroke*	*Thrust using AOS 3 Booster*
750–TF	¾″	2½″	1½″	—	3½″	½″	15/16″	2″	—	—	—	—	¼″	·2208 cu. in.	880 lb.
750–BF	¾″	2½″	1½″	—	3½″	½″	15/16″	2″	—	—	—	—	—	·2208 cu. in.	880 lb.
750–SM	¾″	—	2″	1″	3½″	½″	15/16″	—	1⅜″	1 13/16″	1 13/16″	½″	5/16″	·2208 cu. in.	880 lb.
1125–TF	1⅛″	3″	2″	—	3¾″	¾″	31/32″	2½″	—	—	—	—	¼″	·497 cu. in.	2000 lb.
1125–BF	1⅛″	3″	2″	—	3¾″	¾″	31/32″	2½″	—	—	—	—	—	·497 cu. in.	2000 lb.
1125–SM	1⅛″	—	2½″	1½″	3¾″	¾″	31/32″	—	1⅞″	2⅛″	1⅛″	⅞″	5/16″	·497 cu. in.	2000 lb.
1625–TF	1⅝″	3½″	2½″	—	4″	1″	1 3/16″	3″	—	—	—	—	¼″	1·037 cu. in.	4000 lb.
1625–SM	1⅝″	—	3″	2″	4″	1″	1 3/16″	—	2⅜″	2 15/16″	1⅛″	1 1/16″	5/16″	1·037 cu. in.	4000 lb.
1625–BF	1⅝″	3½″	2½″	—	4″	1″	1 3/16″	3″	—	—	—	—	—	1·037 cu. in.	4000 lb.

HYDRAJAW SUPPORT UNITS

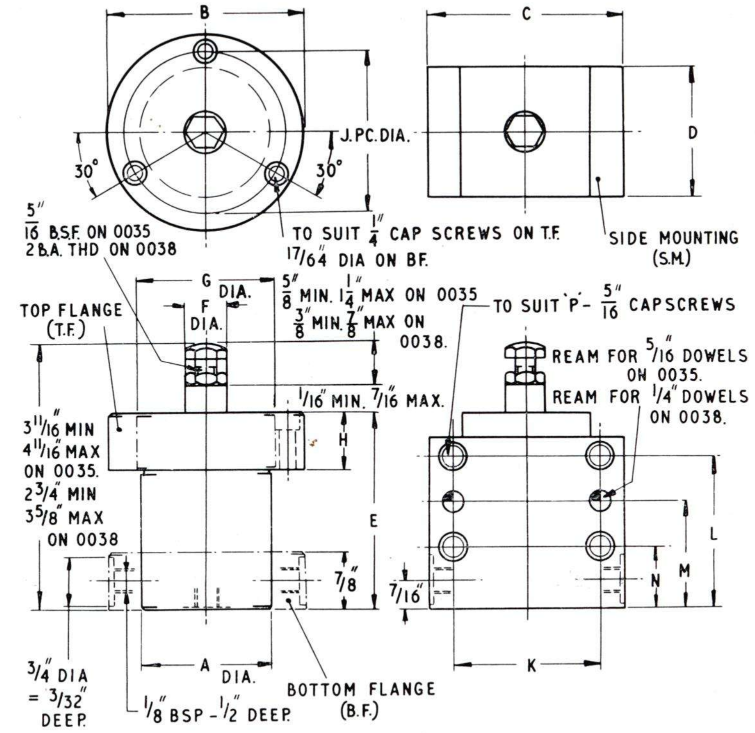
Hydrajaw Support Jacks have been designed to provide industry with an entirely new method of supporting workpieces during machining.

Units take the form of a central, spring-loaded support plunger housed inside a body containing split gripping collet and a collet-actuating piston. The actuating piston is pressurised from a hydraulic oil supply which can be in the form of a simple hand-actuated pump or an air-hydraulic intensifier such as a Clayton Hydrajaw Booster. The actuating piston closes the collet around the support plunger, locking it in its predetermined position. Locking action does not affect the pre-set height of the support plunger.

Each jack is designed to withstand extreme load before collapsing. Using a Clayton Hydrajaw Booster at 2,000 p.s.i. oil pressure, the jack will withstand up to 1900 lb. direct load before failing. As in the case of Hydrajaw Clamping Heads, jacks are available in three models, top and bottom flange mounting and side mounting.

Individual units are self-contained and sealed to prevent the entry of dust and swarf. Gripping collet and collet-actuating piston are hard chrome plate to prevent corrosion, should they be subjected to certain types of coolant.

HYDRAJAW SUPPORT UNITS contd.

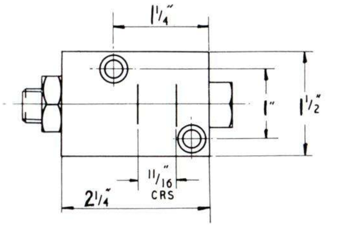


Model	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*M*	*N*	*P*
0035-TF-1	2″	3″	—	—	3″	5/8″	2 1/8″	7/8″	2 1/2″	—	—	—	—	—
0035-TF-2	2″	—	—	—	3″	5/8″	2 1/8″	7/8″	—	—	—	—	—	—
0035-BF	2″	3″	—	—	3″	5/8″	2 1/8″	7/8″	2 17/32″	—	—	—	—	—
0035-SM	—	—	3″	2″	3″	5/8″	—	—	—	2 1/4″	2 15/16″	1 5/8″	15/16″	4″
0038-TF-1	1 3/8″	2 1/2″	—	—	2 5/16″	3/8″	1 1/2″	5/8″	1 15/32″	—	—	—	—	—
0038-TF-2	1 3/8″	—	—	—	2 5/16″	3/8″	1 1/2″	5/8″	—	—	—	—	—	—
0038-BF	1 1/2″	2 1/2″	—	—	2 5/16″	3/8″	1 1/2″	5/8″	2″	—	—	—	—	—
0038-SM	—	—	2 1/4″	1 1/4″	2 5/16″	3/8″	—	—	—	1 5/8″	1 9/32″	7/8″	—	2″

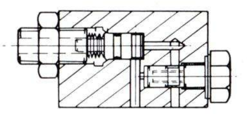
For the designers who wish to position units at closer centres than body dimensions permit, we supply separately the nucleus of the jack unit comprising collet, support plunger and actuating piston. These parts can then be incorporated into special housing if necessary.

Where a compressed air supply is not available to operate a Clayton Hydraulic Booster, we offer a standard manually-operated pump, available in the same three variations as the support jacks.

Sequence Valves and other accessories are also available for use in conjunction with Hydrajaw Equipment.



Hydrajaw Sequence Valve



ECLIPSE CHUCKS AND MAGNETIC AIDS

Eclipse Magnetic Chucks and aids are famous for their reliability and holding power. Maintenance costs are negligible, installation is very simple and trouble-free service ensures complete satisfaction. Eclipse offer a complete service in the field of magnetic holding and a great deal of experience to solve all problems.

PERMANENT-ELECTRO MAGNETIC CHUCKS

The patented construction of the workholding surface enables components of varying thickness to be held with equal facility. Rough parts can be held easily. Once in operation, these chucks are entirely independent of any power supply, eliminating the dangers which might occur in the event of a power failure.

Expansion of the chucks due to heat generated in the windings and the subsequent inaccurate machining is minimised since the direct current is only applied during magnetising and demagnetising. This factor also lowers operating costs to a minimum.

Push button operation and easy loading/unloading give this most modern Eclipse product unrivalled advantages.

Controllers are necessary for use with these units, these being in either self-contained steel cubicle or as a panel for mounting alongside other electrical control gear.

Control equipment is in accordance to B.S.S. 2771–1956.

Chucks may be secured to machine tables by independent clamps which are supplied, or by cap screws which can be supplied in place of clamps where requested.

The circular model can be supplied with moisture-proof socket outlet, enabling connection to be made with control equipment only when loading and unloading.

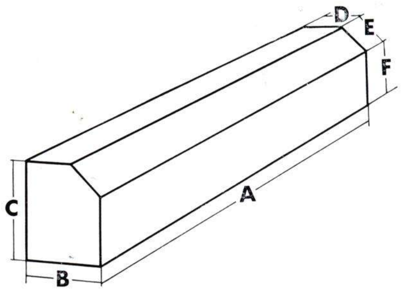
Specifications:

The dimensions are nominal sizes.

Chuck No.	*Length*	*Width*	*Height*	*Nett Weight*
PE.1224	24″	12″	4⅜″	311 lbs.
PE.1230	30″	12″	4⅜″	395 lbs.
PE.1236	36″	12″	4⅜″	478 lbs.
PE.1240	40″	12″	4⅜″	532 lbs.
PE.1624	24″	16″	4⅞″	470 lbs.
PE.1630	30″	16″	4⅞″	590 lbs.
PE.1636	36″	16″	4⅞″	720 lbs.
PE.1640	40″	16″	4⅞″	800 lbs.
PE.1824	24″	18″	5¼″	575 lbs.
PE.1830	30″	18″	5¼″	725 lbs.
PE.1836	36″	18″	5¼″	878 lbs.
PE.1840	40″	18″	5¼″	976 lbs.
PE.2024	24″	20″	5 7/16″	670 lbs.
PE.2030	30″	20″	5 7/16″	840 lbs.
PE.2036	36″	20″	5 7/16″	1010 lbs.
PE.2040	40″	20″	5 7/16″	1125 lbs.
Circular Model				
PE.24C	24″ dia.		5 7/16″	

FEEDER BARS

Feeder Bars enable magnetic flux to be collected from the major poles and applied to the sides of the workpiece for squaring, or to the underside of a component for clearance. Supplied in pairs and machined on all faces.



Specifications

Model No.	*A*	*B*	*C*	*D*	*E*	*F*	*Weight per pair*
971/6	5 15/16″	2⅜″	2¾″	1⅝″	1 1/16″	2″	21 lb.
971/18	17¾″	2⅜″	2¾″	1⅝″	1 1/16″	2″	64 lb.
971/24	23¾″	2⅜″	2¾″	1⅝″	1 1/16″	2″	86 lb.
971/30	29½″	2⅜″	2¾″	1⅝″	1 1/16″	2″	106 lb.

ECLIPSE 'ALCOMAX' PERMANENT MAGNETIC CHUCKS

All standard chucks have a carefully-calculated arrangement of poles designed to provide the greatest holding power for the largest variety of components. For all types of grinding machines, and on suitable workpieces, metal-cutting operations can be achieved successfully. Some models can be supplied ground to the same height and modified where necessary for multiple mounting.

High quality alloys to controlled standards are used for the permanent magnets, ensuring high permeability. Substantial side and end stops are provided. Clamps are non-magnetic iron, eliminating excessive swarf build-up.

Being self-contained, without any leads to an electricity supply, the chuck can be rapidly set up on any machine, used on a bench and easily adapted to Tool Room or production work.

TYPE AXL CHUCKS

These chucks enable much larger machines to be fitted with permanent magnetic chucks, and they have the following additional features.

All models are suitable for mounting independently or as multiple units.

Standard pole pitch (40 mm) enables interchange of accessories between all Type AXL chucks.

Conventional handle operation has movement simplified by needle roller bearings applied to eccentric and link mechanism.

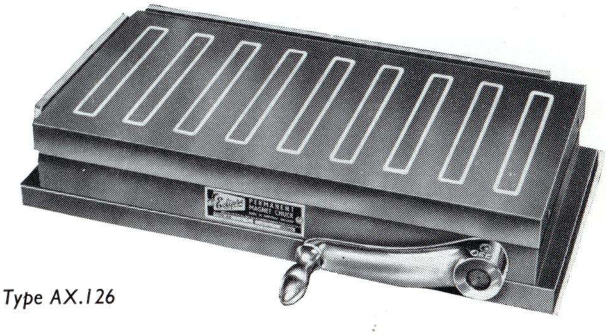
Hydraulic operation, ideal for multiple mountings can be supplied as an alternative. Operating cylinder can be fitted without any machining, and coupled to operating pump capable of controlling chucks independently or together.

For specifications of Types AX and AXL chucks, see page opposite.

HYDRAULIC OPERATING PUMPS AND CYLINDERS

HYDRAULIC OPERATING CYLINDER

For use with Type AXL chucks, one cylinder is required per chuck. Fixing is by two screws ($\frac{3}{8}''$ B.S.F.) provided. The cylinder is fitted over the operating handle spindle extension.



Type AX.126

Specifications:

Cat. No.	995
Overall dimensions	$9\frac{3}{4}'' \times 2\frac{3}{16}'' \times 2\frac{9}{16}''$
Approx. Weight	10 lbs.

HYDRAULIC OPERATING PUMPS

Designed to work in conjunction with the Operating Cylinders specified above.

Up to six chucks can be operated by hydraulic pump No. 994/1. However, where chucks are to be controlled individually, it is necessary to connect to independent operating valves. For example, to operate two chucks or two sets of chucks independently, requires Pump No. 994/2.

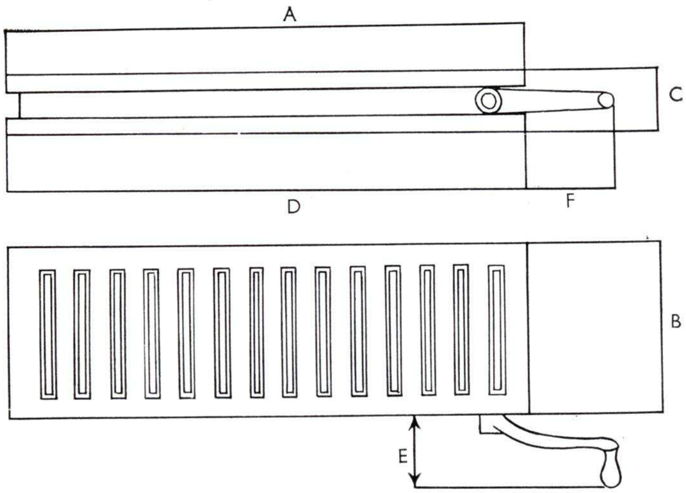
Specifications:

Cat. No.	*No. of Valves*	*No. of pipe unions and washers*	*Approx. Weight*
994/1	1	2	19 lbs.
994/2	2	4	$22\frac{1}{2}$ lbs.
994/3	3	6	27 lbs.

Steel hydraulic piping, Cat. No. 998, $\frac{1}{4}''$ o.d. 16 gauge, can be supplied in standard lengths of 5′.

Additional hydraulic pipe unions and washers Cat. No. 996 ($\frac{1}{4}''$ B.S.P.) and hydraulic pipe straight couplings Cat. No. 997 ($\frac{1}{4}''$ B.S.P.) for extending runs of piping are available.

SPECIFICATIONS OF TYPES AX AND AXL CHUCKS



Cat. No.	Code Word	Dimensions A	B	C	D	E	F	ES	Nett Weight
AX.510	AXAGA	10″	5″	2″	11″	2 7/8″	15/16″	1 3/4″	28 lbs.
AX.612	AXAGG	12″	6″	2 3/8″	12 7/8″	3 1/8″	2 3/8″	1 7/8″	45 lbs.
AX.614/1	AXAGB	14″	6″	2 1/4″	15 1/16″	3 1/16″	2 5/16″	1 7/8″	50 lbs.
*AX.618/1	AXAGC	18″	6″	2 5/8″	18″	3″	2 15/16″	1 3/4″	76 lbs.
*AX.818	AXAGH	18″	8″	2 3/4″	18″	3 1/2″	4″	1 13/16″	112 lbs.
*AX.824/1	AXAGD	24″	8″	2 3/4″	24″	3 5/8″	4 3/16″	1 13/16″	150 lbs.
†AX.1016	AXAGN	15 3/4″	10″	2 5/8″	16 1/2″	3 1/2″	4″	2 13/16″	114 lbs.
†AX.1020	AXAGJ	20″	10″	2 5/8″	20 3/4″	3 3/8″	5 3/8″	2 1/4″	157 lbs.
†AX.1024	AXAGK	24″	10″	2 5/8″	24 3/4″	3 1/2″	8 1/8″	2 13/16	166 lbs.
†AX.1030	AXAGM	30″	10″	2 5/8″	30 3/4″	3 7/16″	8 3/16″	2 13/16″	214 lbs.
†AX.1224	AXAGL	24″	12″	2 11/16″	24 3/4″	3 15/16″	8 1/8″	2 13/16″	199 lbs.
AXL.1620	AXLAH	19·69″	15·75″	3·16″	19·69″	3·47″	7·22″	—	255 lbs.
AXL.1624	AXLBH	23·62″	15·75″	3·16″	23·62″	3·47″	6·82″	—	306 lbs.
AXL.1630	AXLCH	29·53″	15·75″	3·16″	29·53″	3·47″	8·10″	—	383 lbs.
AXL.1824	AXLDH	23·62″	17·72″	3·16″	23·62″	3·47″	7·82″	—	344 lbs.
AXL.1836	AXLEH	35·43″	17·72″	3·16″	35·43″	3·75″	9·66″	—	516 lbs.
AXL.2024	AXLFH	23·62″	19·69″	3·16″	23·62″	3·47″	7·82″	—	383 lbs.
AXL.2030	AXLGH	29·53″	19·69″	3·16″	29·53″	3·75″	9·54″	—	478 lbs.
AXL.2040	AXLHH	39·37″	19·69″	3·16″	39·37″	3·75″	12·35″	—	638 lbs.

Multiple Mounting. For multiple mounting, chucks marked * in the above table can be supplied ground to the same height without charge. Chucks marked † will be modified for multiple use at a small extra charge.

Ball Handles. For machines having close fitting splashguards, a special ball handle can be supplied to reduce overhang shown as dimension ES in the table.

Handles on Opposite End of Chuck. Chucks with handles at the left end of the front face, instead of the right end as standard, can be supplied to special order.

Standard Attachments. All rectangular chucks are supplied with a pair of clamps (4 bolts for multiple units), an end stop and a back stop.

FINE POLE RECTANGULAR CHUCKS

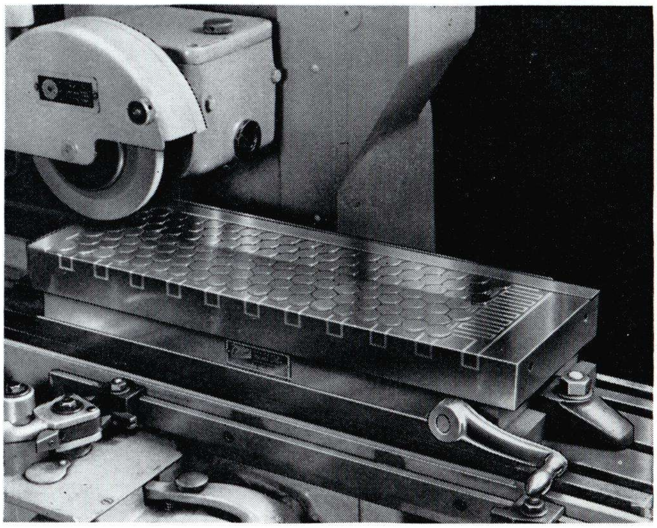
For holding a very wide range of components for the highest degree of precision grinding. The linking of the outer poles permits the flux from all the magnets to be fed to a single workpiece anywhere on the chuck surface. These chucks are not suitable for heavy cutting operations or for relatively rough components.

All chucks are provided with an end stop, a side stop and a pair of clamps.

Specifications:

All details and dimensions not stated are as for the corresponding AX types of chuck.

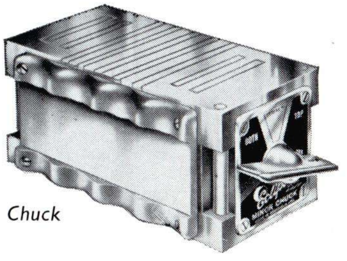
Type	*Code Word*	*Length*	*Width*	*Height*	*Nett Weight*
FP.618	FPAGC	18″	6″	3¼″	99 lbs.
FP.824	FPAGD	24″	8″	3 7/16″	199 lbs.
FP.1018A	FPHCD (Independent)				
FP.1018B	FPHDD (Multiple)	18″	10″	3⅝″	203 lbs.
FP.1218A	FPHDA (Independent)				
FP.1218B	FPHDB (Multiple)	18″	12″	3¾″	245 lbs.



Fine pole chucks are ideal when used for maximum loading of small components.

MINOR CHUCK

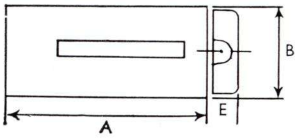
The Eclipse Minor Chuck is ideal for the toolmaker for use on the machine table, with any magnetic chuck, on the bench, or in the hand. Two magnetic faces are provided, one especially designed for very thin parts.

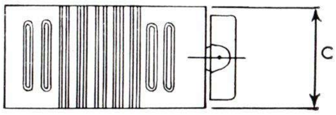


Minor Chuck

Specifications:

Type	*Code Word*	*A*	*B*	*C*	*Height*	*E*	*Nett Weight*
AX.525	AXAGE	5″	2½″	2½″	2¼″	11/16″	8½ lbs.





ECLIPSE HEAVY-DUTY CHUCKS

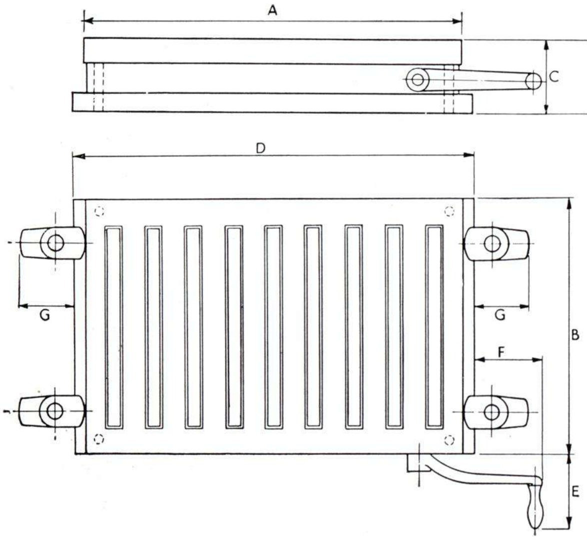
Two models for use on heavy machine tools. The Independent model has a projecting base plate for securing with the four clamps supplied. The Multiple unit model is designed for end-to-end assembly, giving a chuck of unlimited length, having a regular pole spacing throughout its length and drilled for securing with 7/16″ cap screws. Both models have an end-stop and a side-stop.

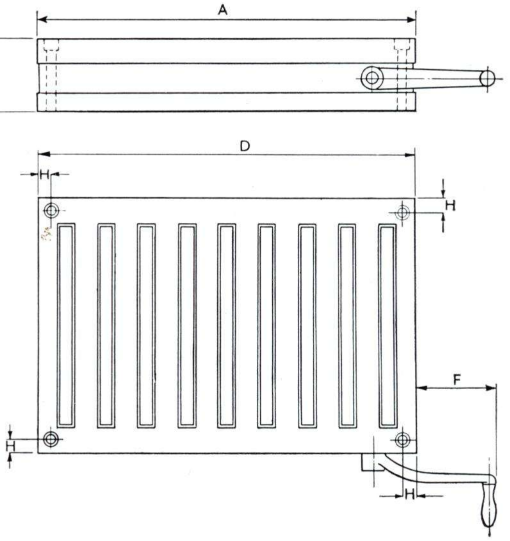
For machines having a close-fitting splash guard, special ball handles can be fitted to request, giving dimension 'E' of 2 1/4″.

Independent Unit

Multiple Unit

Specifications:





Type	Code Word	A	B	C	D	E	F	G	H	Nett Weight
AX.1218A (Independent)	AXHDA	18″	12″	3 1/2″	19 1/8″	3 7/16″	3 13/16″	2 5/8″	—	219 lbs.
AX.1218B (Multiple)	AXHDB	18″	12″	3 1/2″	18″	3 7/16″	4 3/8″	—	5/8″	205 lbs.
AX.1018A (Independent)	AXHDC	18″	10″	3 5/64″	19 1/8″	3 7/16″	5 3/32″	2 5/8″	—	165 lbs.
AX. 1018B (Multiple)	AXHDD	18″	10″	3 5/64″	18″	3 7/16″	5 21/32″	—	9/16″	154 lbs.

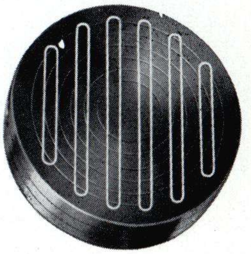
MAGNETIC LATHE CHUCKS

Primarily designed for lathe applications, but equally suitable for grinding, drilling, tapping and universal milling operations on suitable workpieces. The chucks work on the Permanent Magnet system, and are entirely self-contained. Improvements in design since 1950 have given increased holding power and reduced chuck weight. Quite substantial cuts may safely be taken on suitable components. When used on lathes, backplates are required and the schedule of dimensions below will give all the information necessary to manufacture these.

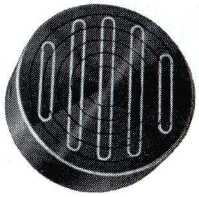
Versatility is the essence of these chucks, transfer from one machine to another being simple and rapid. The greatest advantage can be obtained by using circular Magnetic Chucks for holding irregular shaped parts, thin walled rings and other thin components which are prone to distortion.

All operating handles are detachable. Replacement handles are available.

Ax. 12C and
Ax. 15C.

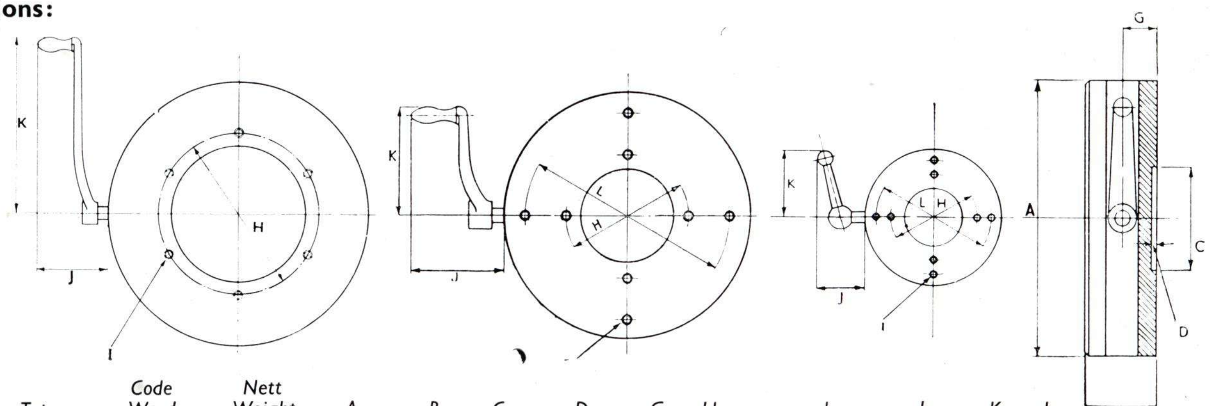


Ax. 12C and
Ax. 9/1C.

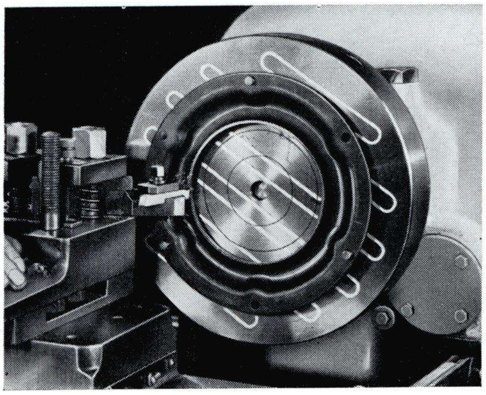


Ax. 65/1C and
Ax. 475C.

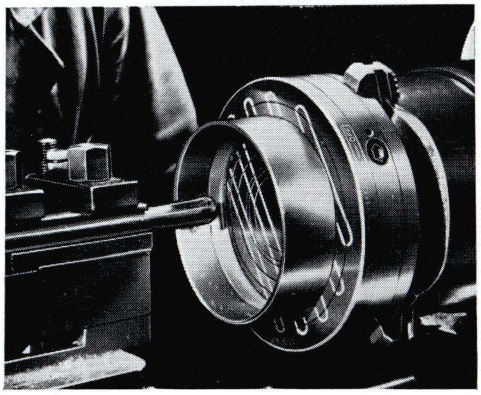
Specifications:



Type	Code Word	Nett Weight	A	B	C	D	G	H	I	J	K	L
AX.475C	CXAGC	8½ lbs.	4¾″	1 25/32″	2″	¼″	⅞″	3″	¼″ Whit.	1⅝″	2 5/16″	4″
AX.65/1C	CXAGB	18¾ lbs.	6½″	2¼″	3″	5/32″	1 3/32″	4″	⅜″ Whit.	2 1/16″	2 31/32″	5½″
AX.9/1C	CXAGA	39½ lbs.	9″	2⅜″	3⅜″	3/16″	1 5/32″	4½″	⅜″ Whit.	3½″	4″	7½″
AX.12C	CXAGD	89½ lbs.	12″	3″	6″	3/16″	1 7/16″	7¼″	½″ Whit.	4 1/16″	5⅞″	10″
AX.15C	CXAGE	149 lbs.	15″	3¼″	7¾″	5/16″	1⅝″	9¼″	½″ Whit. (6 holes)	4⅛″	10″	—



This thin component has only interrupted contact. Drive pegs resist torque displacement.



Holding a magnetic lathe chuck in a normal chuck provides a magnetic faceplate.

ACCESSORIES FOR ECLIPSE MAGNETIC CHUCKS

ADAPTOR PLATES

To hold thin or small parts a fine pole spacing is essential. 'Eclipse' Adaptor Plates convert the standard pole spacing of a chuck to a fine pole spacing, thereby re-distributing the flux from the chuck to a large number of small areas.

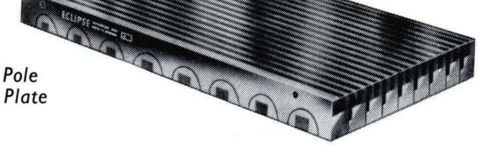
The adaptor plate must match the model of AX chucks, but instructions are given for conversion for use with older 'Eclipse' chucks. End and side stops are provided and special location strips.

Specifications:

Cat No.	*Code Word*	*Length*	*Width*	*Thickness*	*Nett Weight*
*A.501/1	AMAGA	8 11/16″	3 11/16″	15/16″	8 3/4 lbs.
A.612	AMAGE	10 7/16″	4 5/8″	15/16″	14 1/4 lbs.
A.614/1	AMAGB	11 3/8″	4 5/8″	15/16″	16 3/4 lbs.
A.618/1	AMAGC	15 3/8″	4 1/8″	15/16″	20 lbs.
A.818	AMAGH	14 3/4″	6″	15/16″	29 lbs.
A.824/1	AMAGD	11 3/16″	6″	15/16″	20 1/4 lbs.
A.1018	AMHDC	18 1/8″	10 1/8″	1 3/8″	81 lbs.
A.1219	AMHDA	18 1/8″	12 1/8″	1 3/8″	96 lbs.
†A.1020	AMAGJ	9 5/8″	4 1/8″	15/16″	12 3/4 lbs.
†A.1024	AMAGK	12″	3 29/32″	15/16″	16 lbs.
†A.1224	AMAGL	12″	4 27/32″	15/16″	19 1/2 lbs.

† Interchangeable; also suitable for chuck AX.1030.
* Can be used for chucks AX.510, AX.1020, AX.1024, AX.1224, AX.1030.

Interlaced Pole Adaptor Plate.



Parallel Pole Adaptor Plate

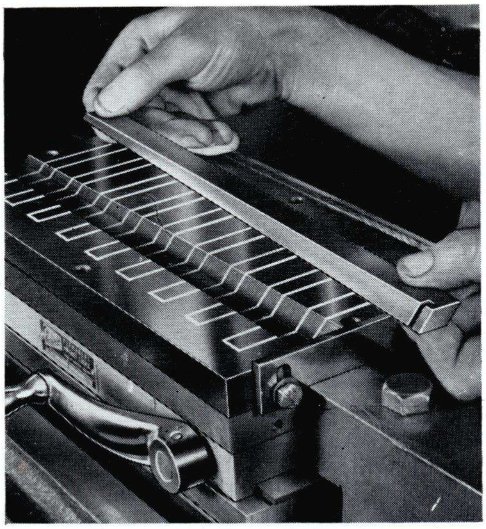
ADDITIONAL TOP PLATES

Permanent Magnet Chucks are being used increasingly as holding jigs and fixtures. In this connection, it is often necessary to machine the top plate of the chuck, to accommodate special forms or for locating recesses. Such machining prevents the chuck being used for other work.

Additional Top Plates mounted on the chuck can be machined to suit particular applications, providing a changeable fixture. In this way, one chuck can be used as the basic unit of several fixtures.

The size of the Additional Top Plate should match that of the chuck. When mounting, care should be taken to ensure that the poles of the two units are perfectly in line.

Additional Top Plates are supplied drilled and counterbored for cap screws to secure them to the chuck.



A tapered key held in a tapered slot.
The additional top plate provides a temporary fixture and the chuck is left in its original state for normal work.

CHUCK BLOCKS

For holding workpieces having an under-side projection or requiring support on an inside or side face, these Chuck Blocks are provided in matched pairs.

They can be machined by users to suit their own requirements for holding components at varying angles.

Chuck Blocks act as a road down which magnetic flux passes from chuck to workpiece.

Size: 3″ × 2 3/8″ × 1 1/4″. Weight: 5 1/2 lbs.

Chuck Blocks

DEMAGNETISERS

Workpieces in such materials as tool and high-speed steel retain an amount of residual magnetism after magnetic chucking. When subsequent operations demand that this is removed, the 'Eclipse' Demagnetisers are of infinite value. Connection to a suitable A.C. power supply is simple and power consumption is only 60 watts.

A safety buzzer is incorporated as a safety factor.

Double and single units are available, double units being mounted on a base board 11″ × 11″ × 1″.

Single Unit

Double Unit

Specifications:

Single Units

Cat. No.	*Code Word*	*Width*	*Length*	*Height*	*Nett Weight*	*Voltage for Single Phase A.C.*	*Periodity*
955	DMAGA	4⅝″	6¼″	3⅝″	7 lbs.	200/250	40/60
956	DMAGB	4⅝″	6¼″	3⅝″	7 lbs.	100/130	40/60
957	DMAGE	4⅝″	6¼″	3⅝″	7 lbs.	100/130	20/30

Double Units

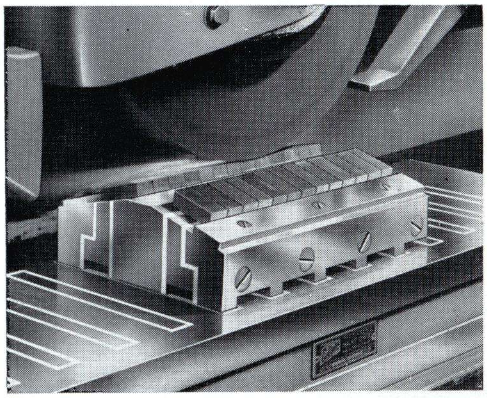
Cat. No.	*Code Word*	*Width*	*Length*	*Height*	*Nett Weight*	*Voltage for Single Phase A.C.*	*Periodity*
960	DUAGA	6¼″	9¼″	3⅝″	16½ lbs.	200/250	40/60
961	DUAGB	6¼″	9¼″	3⅝″	16½ lbs.	100/130	40/60
962	DUAGE	6¼″	9¼″	3⅝″	16½ lbs.	100/130	20/30

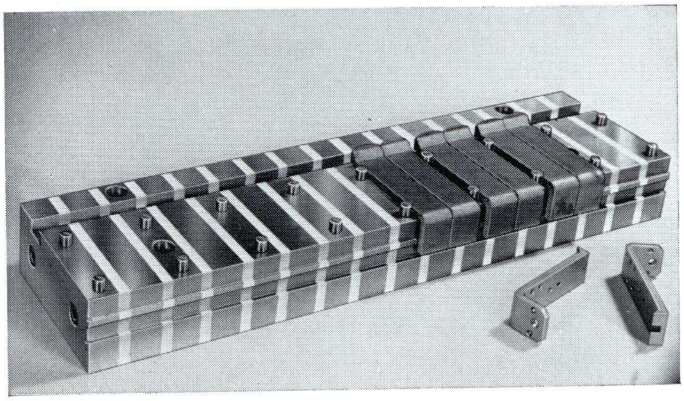
MAGNETIC FIXTURES

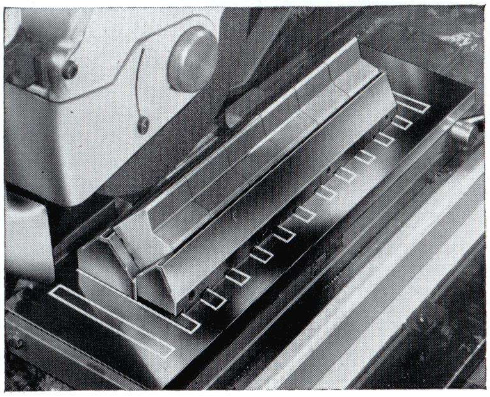
Irregular shaped components can be better held for production machining if a magnetic fixture is designed specifically for that part, to be used on an 'Eclipse' chuck which has sufficient energy to feed such a fixture.

Given the necessary data, such a fixture will be designed.

The illustrations show three of many successful 'Eclipse' Magnetic Fixtures.







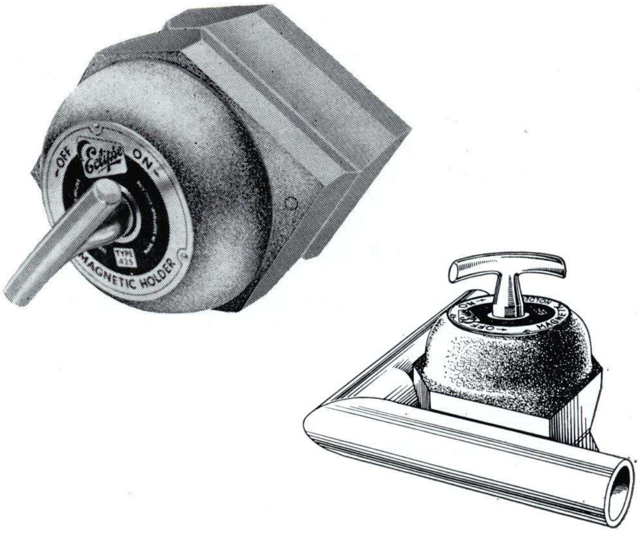
ECLIPSE MAGNETIC AIDS

MAGNETIC HOLDER No. 925

A permanent magnet device capable of exerting a most powerful hold on iron and steel plates, bars or tubes.

Simple hand-operated handles control the unit which is most widely used for holding components during welding.

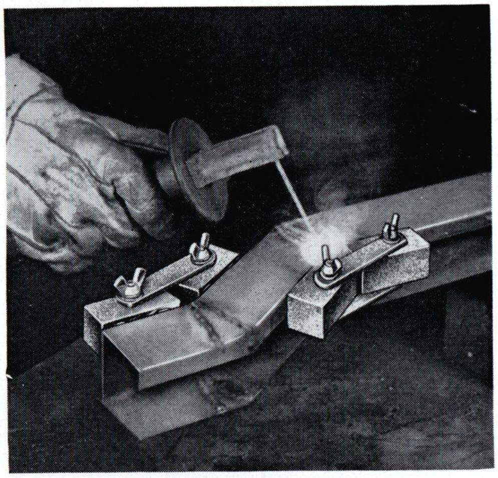
The three pole faces having a 'V' machined in them are designed to hold round bars and tubes, the plain pole faces to secure flat sections, angle iron, channel or girder sections.



Specification:

No.	Dimensions	Nett Weight
925	4¼″ × 4¼″ × 5½″	12½ lbs.

MAGNETIC ADJUSTABLE LINKS No. 920



Workpieces of various angles securely held, easily adjusted.

Provides the welder with a very simple method of clamping two light parts together. The two blocks can be adjusted to any angle and firmly secured by thumbscrew to lock the position. The powerful magnetic hold of the unit will be best maintained if the contact faces are kept in good condition, flat and free from burrs.

Used in multiples, Magnetic Adjustable Links can hold any number of sheets in the most compound arrangement of angles. Time is saved and a pair of hands are freed whenever they are employed.

Specification:

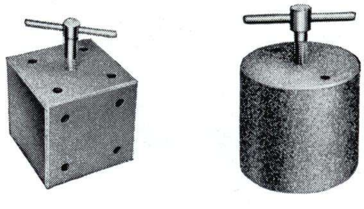
No.	Dimensions	Overall Length	Overall Width	Nett Weight
920	2¼″ × 1″ × 1″	4⅛″	2¼″	1 lb. 6 oz.

MAGNETIC HOLDFASTS

In addition to many applications in welding fabrication and assembly, Holdfasts solve many problems of holding and positioning. The powerful Alcomax magnet is located in the mild steel body by white metal and the unit is provided with a plate jack-off screw.

Supplied with a plated keeper.
Holes tapped ¼″ Whit./¼″ U.N.C. or 8 S.I.

Magnetic pull is quoted as the performance of a fully magnetised magnet through an air gap of ·005″ against flat mild steel plate of adequate thickness.



Specifications:

No.	Dia.	Body	Height Overall	Magnetic Pull
939	1¾″	1¾″	3″	40 lbs.
940	2⅛″	$1\frac{15}{16}$″	$3\frac{3}{16}$″	60 lbs.
941	2¾″	2½″	3¾″	144 lbs.
942	4″	$2\frac{15}{16}$″	$4\frac{15}{16}$″	315 lbs.
938 Cube	3¾″ Cube		$5\frac{11}{16}$″	415 lbs.

MAGNETIC POSITIONER No. 922

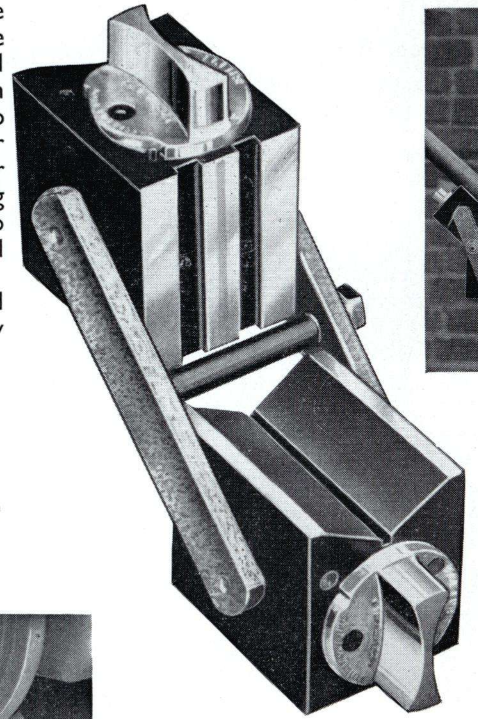
Larger than the Magnetic Adjustable Link, yet capable of holding with more angular facilities than the Magnetic Holder. The flux-control of one combined with the full adjustability of the other provide an extremely powerful and useful unit. The two magnetic units, independently controlled, are similar to small magnetic vee-blocks, having vee'd faces for round work and flat faces for sheets and plates. Joining strips are of non-magnetic steel and, after setting to the required position, locking is effected by one central nut.

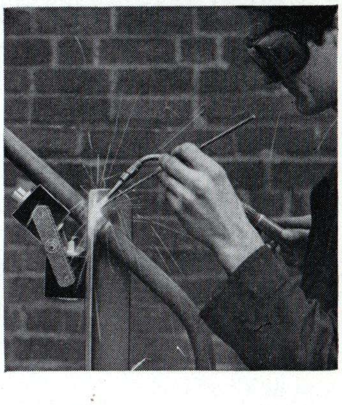
Many applications which would prove difficult to hold by other methods, can be held firmly and simply by these units whilst welding is done.

Specification:

No.	Dimensions of Unit	Block Dimensions	Nett Weight
922	8 3/16″ × 3″ × 2½″	2½″ × 2½″ × 2″	7 lb.

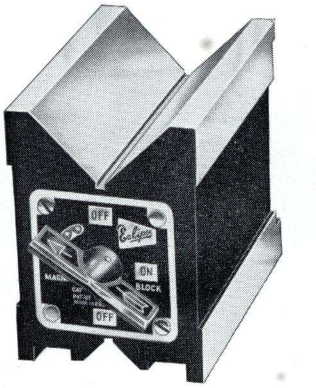
Single blocks are available.

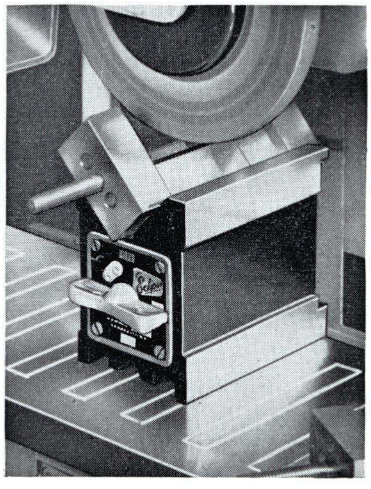




Welding a tubular guard rail to a flat stanchion.

MAGNETIC VEE BLOCK No. 934





A Typical Toolroom Application.

An indispensable item of equipment for toolrooms, production shops and standard rooms. The three contact faces, all of which are magnetised at the same time, will hold the vee-block and the work on any flat ferrous surface. It can be used on machines fitted with magnetic chucks, and in such instances there is no need to switch on the chuck. Complete sealing protects the unit against the ingress of coolants.

Specifications:

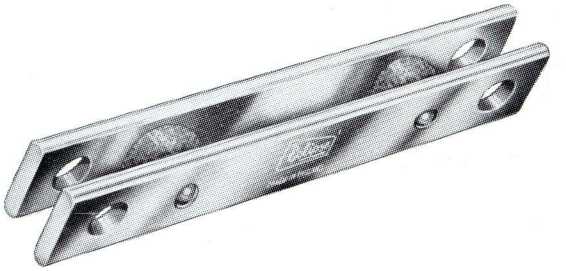
No.	Width	Length	Height		Nett Weight
934	2¾″	4″	3¾″	Single	8 lb. 12 ozs.
934P				Matched Pairs	17 lb. 8 ozs.

MAGNETIC RACKS Nos. 945, 946 and 947

Expensive permanent-magnet material is used to its best advantage in Magnetic Racks which provide the simplest solution to many lifting and holding problems. All available flux from a small number of magnets is concentrated in two mild steel pole pieces. The three available sizes can be widely used as jigs to hold parts for paint dipping, for rust preventative coating, and for use as tool racks or the conveying of light steel components under a thin belt.

Specifications:

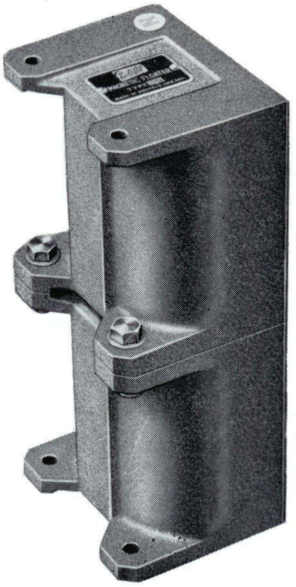
No.	Length	Width	Pole Spacing	Nett Weight
945	6″	1″	¾″	11 ozs.
946	9″	1″	¾″	1 lb. 2 ozs.
947	12″	1″	¾″	1 lb. 6 ozs.

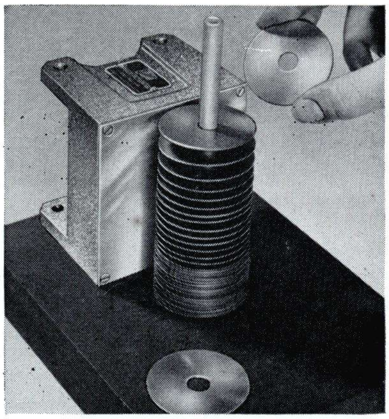


MAGNETIC FLOATERS Nos. 913, 914 and 915

These devices facilitate the operation of iron and steel sheets, and other shapes, oiled or clean. The principle is that permanent magnets, suitably strong, are located opposite the edges of the workpieces, magnetising them by induction, so that they repel one another and the top sheet floats in the air. The magnets are specially designed to give this effect, the aluminium die-cast housings automatically prevent the incorrect contact of the magnet with another.

Units may be assembled to a height to suit the particular application. The North pole of each unit is marked, and when assembling multiple units, either vertically or horizontally, like poles must be adjacent. The use of these units simplifies the task of separating and feeding articles singly, eliminates the danger of feeding two articles together and reduces the risk of cut fingers and similar hazards. When used on sheets which are oiled or greasy, more than one unit will be necessary to overcome the adhesion of one sheet to another.





Small round parts, such as washers, dropped over a fixed rod, are effectively separated.

Specifications:

No.	*Width at Poles*	*Height*	*Extreme Depth*	*Holes to Clear*	*Fixing Centres*
913	2⅞″	3″	2 9/16″	¼″ Whit.	1 15/16″
914	3⅝″	4″	3″	¼″ Whit.	2⅝″
915	4 7/16″	6″	3½″	⅜″ Whit.	3⅛″

HAND MAGNET No. 930

ON

OFF

For lifting and separating applications. Its low weight, only 4½ lbs., suits it to hand use. The entirely self-contained permanent magnet system can be instantly engaged or disengaged. Complete demagnetisation in the "off" position ensures that even the smallest parts are instantly released. Maximum efficiency is always maintained.

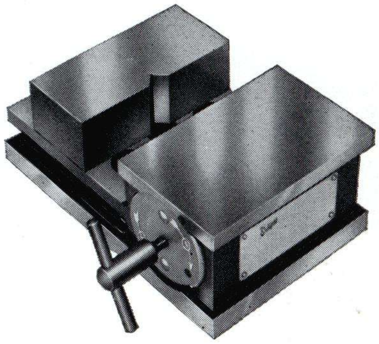
By fitting the special high density gap attachments provided to the standard poles, exceptional power can be concentrated across the small gap, so as to detect even the smallest magnetic particles in the finest mixtures.

Specification:

No.	*Height*	*Distance between Poles*	*Nett Weight*
930	8¼″	1¼″	4½ lbs.

MAGNETIC VICE No. 927

An accurate grinding vice, capable of ensuring work square with the minimum of setting up. Design eliminates the distortion experienced in other types of vice, since the hold is entirely magnetic and the vice is not subject to the distortional thrust normally produced by the screw.



The finish-ground case-hardened faces are held to the following maximum deviations:—

Flatness 0·0002″ : Squareness 0·001″ per inch

Specification:

No.	*Width*	*Length*	*Height*
927	$5\frac{5}{8}''$	$6\frac{11}{16}''$	$2\frac{11}{16}''$

MAGNETIC BASES Nos. 903, 902 and 901

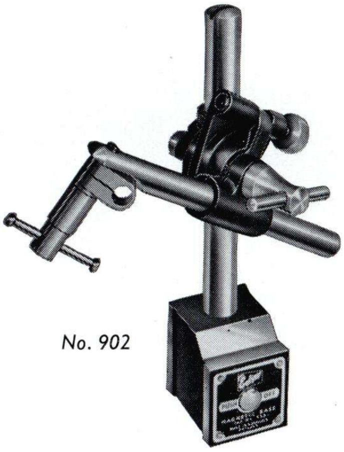
No. 903

No. 903. An improved version of the most popular model (previously No. 900A) now having a thicker pillar with corresponding improved rigidity.

No. 902. This compact model has a fine adjustment screw incorporated in the pillar assembly. Heavier pillar and crossbar afford greater rigidity. Packed in a polished wood box.

No. 901. Having large base unit and heavy fittings, this model provides maximum magnetic performance. A fine adjustment screw is provided and fittings are suitable for larger dial gauges.

All 'Eclipse' Magnetic bases have simple push button control, enabling switching 'On' and 'Off' with one hand. Units are complete with pillar, crossbar, knuckle-joint assembly and crossbar assembly. The base, two sides and the vee faces are all energised. Fitments are available to accept English ($\frac{1}{4}''$) or Metric style (8 mm) dial gauges.



No. 902

Specifications:

No.	*Base Unit*	*Overall Height*
903	$1\frac{5}{8}'' \times 1\frac{7}{8}'' \times 1\frac{15}{16}''$	$9\frac{5}{16}''$
902	$1\frac{5}{8}'' \times 1\frac{7}{8}'' \times 1\frac{15}{16}''$	$8''$
901	$2\frac{1}{2}'' \times 2\frac{1}{2}'' \times 3''$	$9\frac{5}{16}''$

The two sizes of base unit are available without fitments:

No. 900 WF: $1\frac{5}{8}'' \times 1\frac{7}{8}'' \times 1\frac{15}{16}''$
No. 901 WF: $2\frac{1}{2}'' \times 2\frac{1}{2}'' \times 3''$

MAGNETIC QUICK LIFTER No. 975

The 'Eclipse' Magnetic Quick Lifter provides the most rapid means of picking up, and releasing, ferrous loads up to 500 lbs., with flat surfaces and adequate thicknesses, in conjunction with either manual or power-assisted lifting tackle.

Unlike the large electro-magnetic lifting equipment which can safely operate in scrap yards and raw material stores, this unit is intended primarily for use in machine shops for handling semi-finished or finished products having controlled loading conditions.

PRINCIPAL USES

Lifting of semi-finished components, or assemblies, as well as finished products, where slings or grabs cause damage to surfaces.

Lowering loads quickly into final position, without slings, and thereby eliminating the subsequent problems associated with the removal of trapped slings.

Rapid automatic pick-up and discharge of components for transfer machines, assembly lines or general mechanical handling.

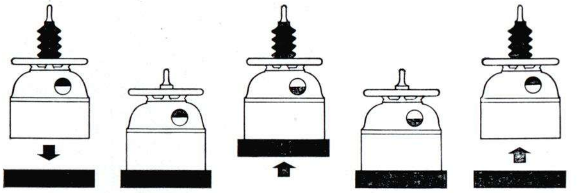
The hold is provided by exceptionally strong Alcomax permanent magnets, giving unlimited service. The unit is therefore independent of external power supply.

The Quick Lifter is supplied with a hand-operated key and shackle.

Specification:

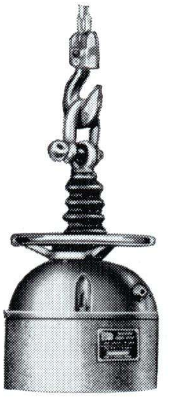
		Height		
No.	*Dia.*	*To Hand Wheel*	*When Lifting*	*When Idle*
975	9½″	9 9/16″	15¾″	12″

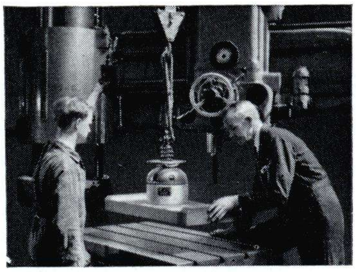
METHOD OF OPERATION

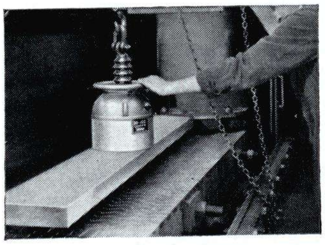


Lower — *in contact* — *Hoisting switched on* — *Lower to release* — *Hoisting switched off*

As the lifting tackle elevates the Quick Lifter, it automatically picks up the load. It is similarly released after the load has been lowered to its final location. In normal use, the operator has only to control the lifting tackle, the functioning of the magnet being completely automatic.







The Quick Lifter in use on a typical application.

OTHER MAGNETIC AIDS

Clamping Magnet No. 937. A high performance gripping magnet assembly comprising a block magnet in Alcomax III between two pole pieces in mild steel. Assembly is by bolting.

Supplied magnetised, with two magnetic screens to reduce stray flux when not in use.

Magnetic Conveyor Rails and Pulleys. This is a system of magnetic elements and accessories, complete in themselves, for steep runs on belt conveyors handling light ferrous articles.

The general operating principle is that there are stationary magnetic rails and rotating magnetic pulleys behind a conveyor belt. The magnets hold the articles against the belt, and the belt provides traction.

Magnetic Feed Roller No. 973. Permanent Magnetic Rollers to feed forward ferrous bars, sheets and pipes, they may also be used to retard the feeding speed to suit the process ahead.

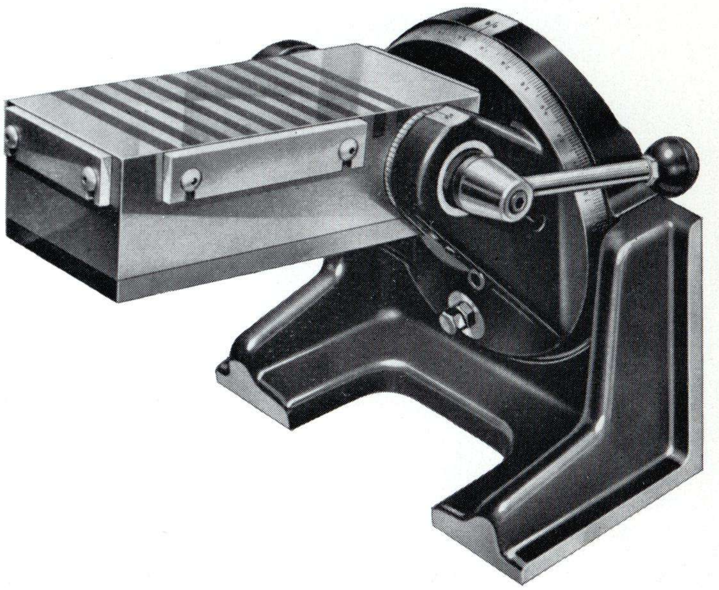
Workpieces can be conveyed above or below rollers.

Rollers are supplied with plain bores and peripheries but can be adapted to suit applications.

Further details upon request.

FIMAX UNIVERSAL PERMANENT MAGNET CHUCK

This unit consists of a magnetic chuck mounted so that it can be positioned at any angle. The mounting castings are of high-grade cast iron, accurately machined and fitted, and having strong ribbing for strength and rigidity. All parts subject to wear are hardened and ground.

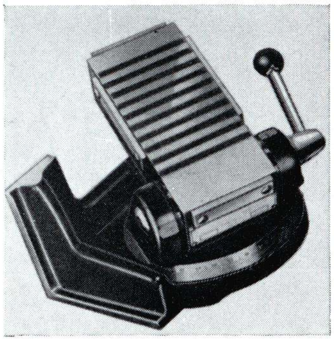


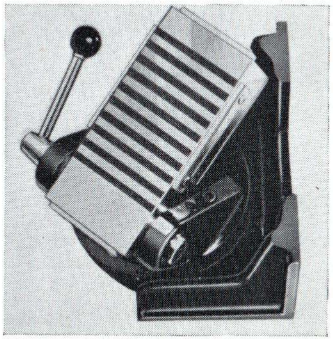
Operation is simple. Any desired angle may be set by the circular scales provided, by sine bar or other means and locked securely in position. The operating lever can be set on either side of the chuck and may be varied in position to avoid fouling the work. The versatility, holding power and accuracy of this unit suit it to toolroom and workshop applications.

Each unit is supplied complete in a lined, hardwood cabinet.

Specification:

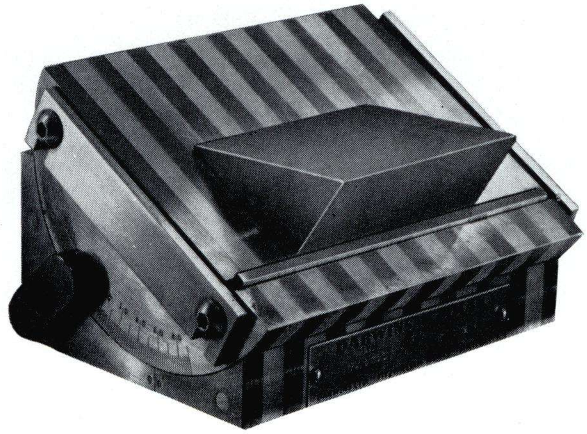
Type	*Height* *Max.*	*Min.*	*Base Area* *Max.*	*Min.*	*Working Surface*	*Weight*
FX.0703	$7\frac{5}{8}''$	$4\frac{1}{2}''$	$8\frac{5}{8}'' \times 6''$	$8\frac{5}{8}'' \times 4\frac{3}{8}''$	$7'' \times 3\frac{3}{16}''$	35 lbs.





FIMAX TILTING ADAPTOR BLOCK

Used with a magnetic chuck for the rapid setting of all angular workpieces. It consists of two parts, accurately machined and fitted so that one part may rotate in the other. This construction allows the flux emanating from the top of the magnetic chuck to be transmitted to a surface which can be tilted at any angle. There is practically no loss of holding power. Any angle may be set by the scale provided and then locked. This may be done away from the magnetic chuck, and if extreme accuracy is necessary sine bars or other methods may be used. It should be placed on the magnetic chuck so that the poles are roughly parallel.



Each unit is supplied in a lined case.

Specification:

No.	*Length*	*Width*	*Height*	*Range*
FA.4300	$4\frac{1}{4}''$	$3\frac{21}{32}''$	$1\frac{25}{32}''$	0°–90°

TOBLER HIGH-PRECISION EXPANDING MANDRELS

The ranges of standard mandrels cover Back Clamping, Endwise Clamping and Between Centres Types, these being of the split sleeve design. In addition, special sleeve or slide type can be manufactured to customer's requirements.

Sleeves can be made to fit splined, square and other shaped bores, and can be supplied to fit threaded bores. Mandrels can be supplied with parallel, Morse Taper or other shanks, and special forms, diameter and lengths of sleeves will be quoted upon request.

Used extensively by leading Aircraft, Automobile and Machine Tool Manufacturers. Centre Lathes, Grinding Machines, Semi-Automatics, Automatics, Multi-Spindle Machines and Copying Lathes can all advantageously employ these mandrels.

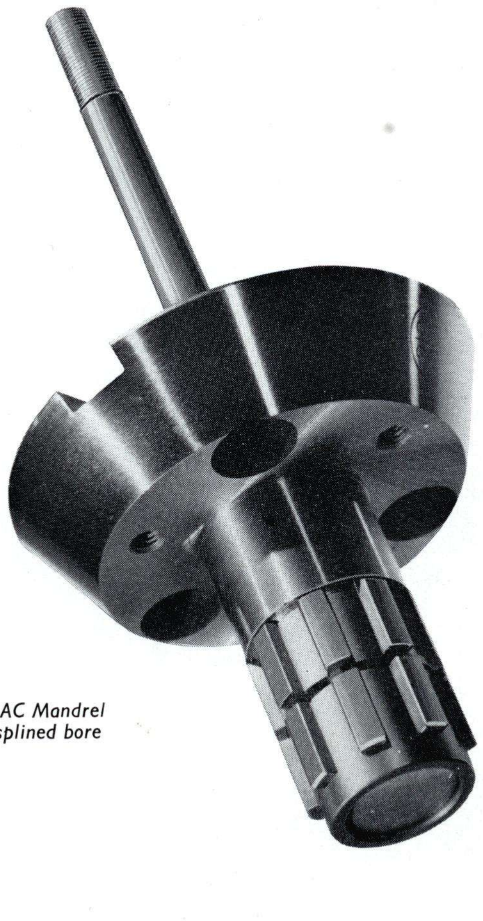
By using Tobler Mandrels, an accurate relationship between the bore and the external diameter being machined is assured.

SPECIAL EXPANDING MANDRELS

TYPE MAC

To overcome mass production problems, this range offers the loading speed required by most Automation units with consistent accuracy. Suitable for use on most machine tools, clamping is not only on components having a plain bore, but also on those with splined or other profiled bores. Operation from front or rear of mandrel, may be by hydraulic, pneumatic or mechanical means.

Concentricity is guaranteed to ·0002″, yet the units are robust enough to enable one or two components to be machined simultaneously with multiple tools. Expansion is generally ·020″/·030″ but can be increased if required. Clamping is extra strong and instantaneous in its action, giving improved production rates which are further enhanced by the ability of the unit to handle thousands of pieces without maintenance, giving original accuracy throughout.



A MAC Mandrel for splined bore

The mandrel consists of a hollow cylindrical body (A) having a number of longitudinal slots through which operate a series of precision ground steel slides (B). The latter are in contact with a tapered central piston (C) which is threaded at one end to accommodate a drawbolt. The tapered lower faces of the slides accurately engage with a male tapered arbor which operates through the centre of the body. Radial grooves in the slides receive spring-retaining ring (D), ensuring that slides are constantly in contact with the arbor.

When drawbolt (C) is pulled, the slides are brought to the clamping position, reverse motion producing retraction of the slides with assistance from spring ring (D). Oscillating workstop (E) is for use when side faces of components are not always square. In some instances when clamping components having splined bores, the body carries integral teeth to drive the component (F). Driving teeth may be in alternative positions with the moving slides as in Fig. 1, or embracing them as in Fig. 9.

METHODS OF OPERATION

The mandrels may be operated by a rear drawbolt (Fig. 1), by screw actuation (Fig. 2) or by pressure from the tailstock centre.

MAC mandrels have been designed and manufactured for a wide variety of applications, examples of which are given below.

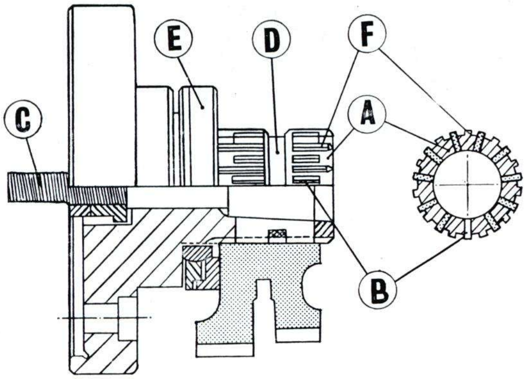


Fig. 1

Operated by a drawbolt from the rear, the plate mounted mandrel in Fig. 1 has an oscillating workstop. The component has a splined bore.

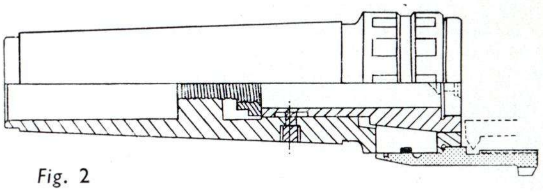


Fig. 2

Used for internal threading as on CRI-DAN machines, this MAC mandrel is Taper-Shank-mounted directly into the workhead. Operation of a hollow hexagon screw clamps the component in position.

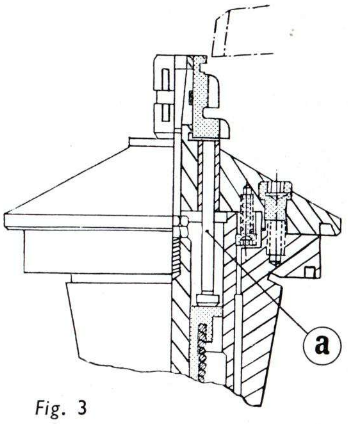


Fig. 3

This plate-mounted mandrel has vertical operation and is suitable for such machines as the FELLOWS Gear Shaper. Operation is by drawbolt, and automatic ejector (a) is for use in conjunction with automatic loading.

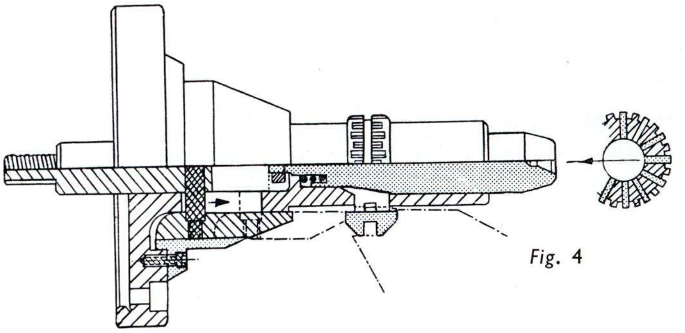


Fig. 4

For use on most copy lathes; tailstock pressure operates the clamping of this mandrel. A retractable workstop, operated by drawbolt, enables the back face of the workpiece to be left clear for machining.

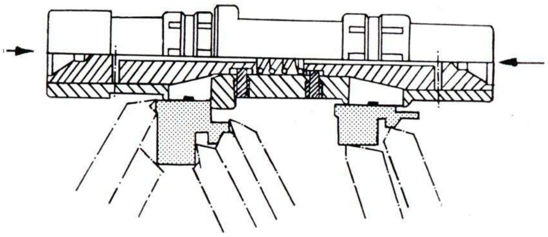


Fig. 5

For use between centres and operated by tailstock pressure, this mandrel has two sets of slides, enabling two components to be machined at the same time.

This mandrel has two sets of slides for two components, and the two hollow central pistons are moved in opposite directions by operation of a single clamping screw.

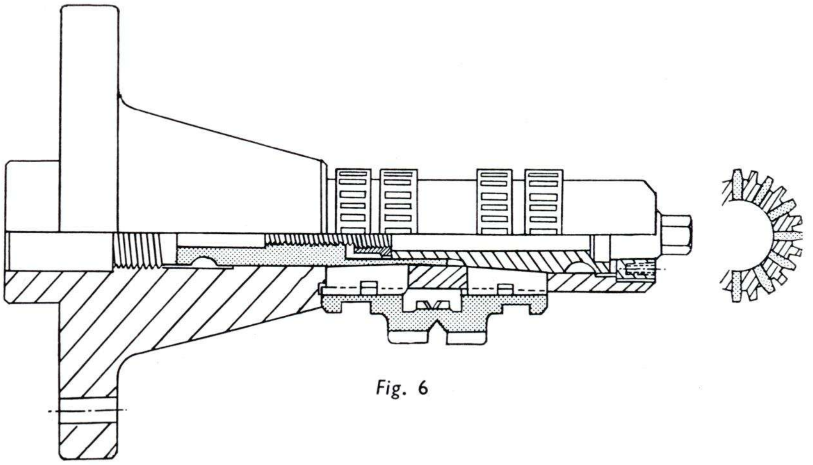


Fig. 6

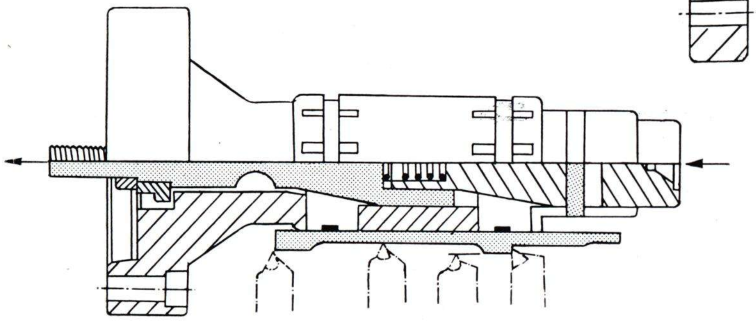


Fig. 7

A plate-mounted mandrel carrying two sets of slides to accommodate extra-long components such as cylinder liners, etc. Operation is by drawbolt to one set of slides and by tailstock pressure to the other.

An air-operated mandrel designed for the simultaneous machining of two components, and carrying a further system of guide plates, operated by tailstock pressure, ensuring longitudinal clamping.

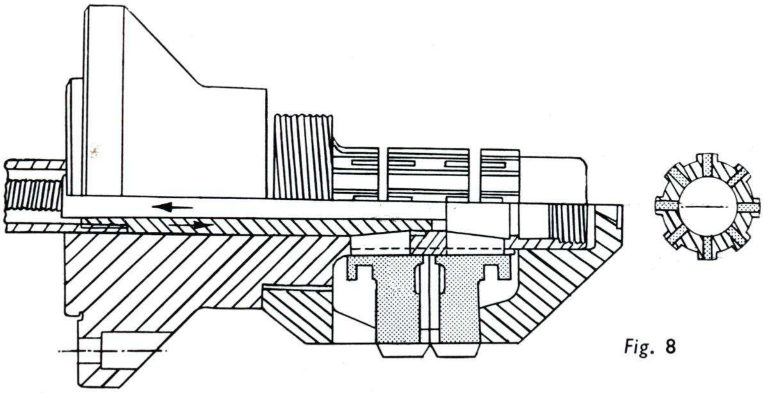


Fig. 8

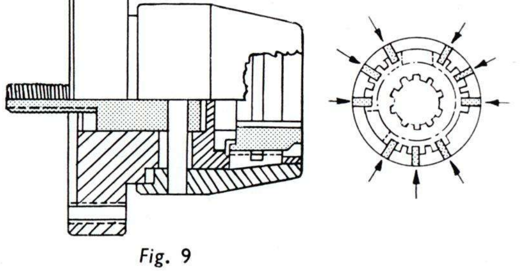


Fig. 9

Particularly suitable for accurate internal grinding or boring on HEALD and similar machines, this mandrel grips externally. A nose-cap connected to the drawbolt serves to operate the slides to the clamping position. Operation can also be effected by a screwed nose-cap, and the mandrels can be designed to grip round, splined or irregular bores, collet or slide type interiors can be supplied.

ORDERING PROCEDURE FOR SPECIAL MANDRELS

The following details must be stated:

(1) The Make and Type of Machine.

(2) Location:
  - (a) Dimension of machine head and register.
  - (b) Number of fixing bolts, size and P.C.D.
  - (c) If by Taper Shank, Number of Taper and whether Tapped.

(3) Method of Operation:
  - (a) Rear Drawbolt, Thread Sizes (Figs. 1, 3, 8 and 9).
  - (b) Front clamping Screw (Fig. 6).
  - (c) Loaded Tailstock or Workhead. Pressure and Method (Figs. 2, 4, 5 and 7).
  - (d) Dual Air Cylinder, Pressure.

(4) Method of Operation—Chucks (Fig. 9):
  - (a) Rear Drawbolt, Thread.
  - (b) Threaded Front Nosepiece.

(5) General Information:

Drawing of component marked in RED to denote the preferred clamping area and in GREEN to show machining to be performed when mounted on mandrel.

TOBLER STANDARD EXPANDING MANDRELS—Sleeve type

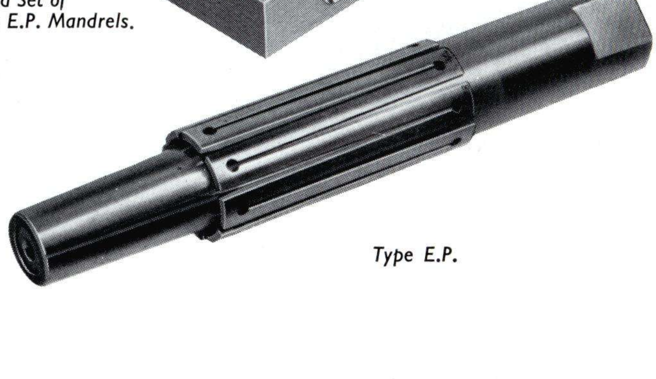
TYPE E.P.—BETWEEN CENTRES TYPE

The simpler type E.P. mandrels consist of a split expanding sleeve, with longitudinal slots cut alternately from each side and having a tapered bore. This bore matches a tapered arbor, which has protected centres and a parallel driving shank. Interchangeable sleeves within a size range can be used on the same arbor. Very high expansion is obtained by sliding the sleeve along the arbor to the required position or size. Heavy cuts may be taken without distortion or slip.

Mandrels are available to suit bores from 15/32″ to 5½″ diameter, expansion increasing with size from 5/64″ to 3/16″ on each sleeve.

Two boxed sets of this type of mandrel are available; No. 1 E.P. containing five arbors and seven sleeves between 15/32″ and 1 1/64″, and No. 2 E.P. which contains three arbors and six sleeves between 63/64″ and 2 5/16″ diameter.

A No. 1 Boxed Set of Type E.P. Mandrels.



Type E.P.

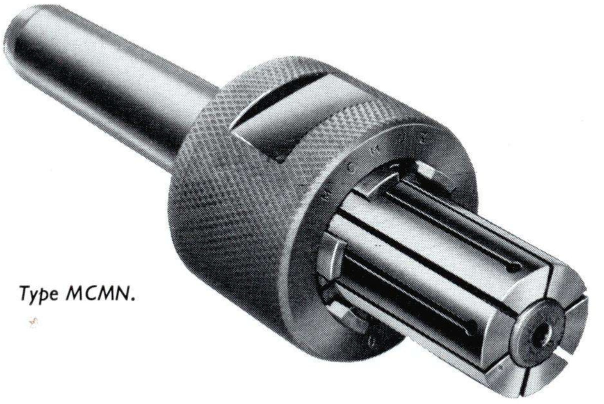
TOBLER MANDRELS, SPLIT SLEEVE, BETWEEN CENTRES TYPE EP

Specifications:

No.	Shank Dia.	Length	Sleeves Diameter of Standard Sleeves in Free Position								Expansion	Length
1	15/32″	4 15/16″	15/32″	1/2″							5/64″	2 3/8″
2	9/16″	5 1/8″	35/64″	9/16″	19/32″						5/64″	2 3/4″
3	5/8″	5 7/8″	5/8″	43/64″	45/64″						5/64″	2 3/4″
4	3/4″	6 11/64″	3/4″	25/32″	53/64″						5/64″	3 1/8″
5	7/8″	6 7/8″	55/64″	29/32″	15/16″						5/64″	3 1/8″
6	1″	8 7/8″	63/64″	1″	1 1/32″	1 7/64″	1 3/16″	1 1/4″	1 11/32″		1/8″	3 15/16″
7	1 3/8″	8 7/8″	1 3/8″	1 27/64″	1 1/2″	1 9/16″	1 37/64″	1 5/8″	1 21/32″	1 47/64″	1/8″	3 15/16″
8	1 3/4″	11 13/16″	1 3/4″	1 13/16″	1 57/64″	1 31/32″	2 3/64″	2 1/8″			3/16″	4 15/16″
9	2 3/16″	13″	2 5/32″	2 9/32″	2 23/64″	2 29/64″	2 1/2″	2 9/16″			3/16″	5 5/16″
10	2 11/16″	13 3/4″	2 11/16″	2 3/4″	2 53/64″	2 15/16″	3 1/16″	3 1/8″			3/16″	5 7/8″
11	3″	13 3/4″	3 3/16″	3 5/16″	3 1/2″	3 5/8″	3 3/4″	3 15/16″			3/16″	5 7/8″
12	3 3/4″	15 3/4″	4 1/8″	4 5/16″	4 1/2″	4 3/4″	4 15/64″	5 1/4″			3/16″	6 11/16″
13			5 5/16″	5 1/2″	5 45/64″	5 29/32″	6 3/32″	6 19/64″				

BACK CLAMPING TYPES—MCMN & EPN

Type MCMN has a Morse Taper Shank for mounting directly into the machine spindle, and Type EPN is mounted between centres. The arbor is threaded, so that the locking nut not only retains the expanding sleeve, but also draws the sleeve along the taper, expanding it and locking the component. Clamping and releasing are thus effected very rapidly. Both Types are ideally suitable for components having a blind bore.



Type MCMN.

Specifications:

No.	Shafts MCMN Morse Taper Sh'k No.	Shafts EPN between centres length	Sleeves Diameter of Standard Sleeves (in Free Position)													Expansion	Length
4×0	2–3–4	2 3/4″	7/32″	1/4″	17/64″	9/32″										1/64″	1/2″
3×0	2–3–4	3″	19/64″	21/64″	11/32″	23/64″										1/64″	5/8″
2×0	2–3–4	3 3/8″	3/8″	25/64″	13/32″	27/64″	7/16″	29/64″								1/64″	25/32″
0	2–3–4	3 9/16″	15/32″	31/64″	1/2″	33/64″	17/32″	35/64″	9/16″							1/64″	1 1/64″
1	2–3–4	4 1/8″	37/64″	19/32″	39/64″	5/8″	41/64″	21/32″	43/64″	11/16″	45/64″	23/32″	47/64″	3/4″		1/64″	1 3/16″
2	2–3–4	4 3/4″	49/64″	25/32″	51/64″	13/16″	53/64″	27/32″	55/64″	7/8″	57/64″	29/32″	59/64″	15/16″		1/64″	1 3/8″
3	3–4–5	5 5/16″	31/32″	1″	1 1/32″	1 1/16″	1 3/32″	1 1/8″	1 5/32″							1/32″	1 21/32″
4	3–4–5	5 7/8″	1 3/16″	1 7/32″	1 1/4″	1 9/32″	1 5/16″	1 11/32″								1/32″	1 13/16″
5	3–4–5	6 1/2″	1 3/8″	1 13/32″	1 7/16″	1 15/32″	1 1/2″	1 17/32″								1/32″	2 3/64″
5A	3–4–5	7 1/16″	1 9/16″	1 19/32″	1 5/8″	1 21/32″	1 11/16″	1 23/32″								1/32″	2 9/32″
6	4–5–6	7 11/16″	1 3/4″	1 25/32″	1 13/16″	1 27/32″	1 7/8″	1 29/32″	1 15/16″	1 31/32″	2″	2 1/32″	2 1/16″	2 3/32″	2 1/8″	1/32″	2 61/64″
7	4–5–6	8 1/4″	2 5/32″	2 3/16″	2 7/32″	2 1/4″	2 9/32″	2 5/16″	2 11/32″	2 3/8″	2 13/32″	2 7/16″	2 15/32″	2 1/2″	2 17/32″	1/32″	3 11/32″
8	4–5–6	8 7/8″	2 9/16″	2 19/32″	2 5/8″	2 21/32″	2 11/16″	2 23/32″	2 3/4″	2 25/32″	2 13/16″	2 27/32″	2 7/8″	2 29/32″	2 15/16″	1/32″	3 47/64″
			2 31/32″	3″	3 1/32″	3 1/16″	3 3/32″	3 1/8″									

ENDWISE CLAMPING—TYPES MCM & MCMT

Designed for mounting directly into the machine spindle, type MCM mandrels consist of a tapered arbor with a Morse Taper Shank for transmitting the drive, and an expanding sleeve. Expansion is achieved by screwing a hexagon-headed screw into the arbor, drawing the sleeve along the taper.

Type MCMT mandrels are drawbolt operated. Mandrels of this type are available from 19/32″ to 3 3/16″ diameter, several sleeves within a size range being interchangeable on the same arbor. Also supplied with parallel shank if required.

Type MCM.

Specifications:

No.	Shank Morse Taper Sh'k No.	*Sleeves* Diameter of Standard Sleeves in Free Position										Expansion	Length
1	2–3–4	19/32″	5/8″	21/32″	11/16″	23/32″	3/4″					1/32″	1 3/8″
2	2–3–4	25/32″	13/16″	27/32″	7/8″	29/32″	15/16″					1/32″	1 37/64″
3	2–3–4–5	31/32″	1″	1 1/32″	1 1/16″	1 3/32″	1 1/8″					1/32″	1 13/16″
4	3–4–5	1 5/32″	1 3/16″	1 7/32″	1 1/4″	1 9/32″	1 5/16″	1 11/32″				1/32″	1 31/32″
5	3–4–5	1 3/8″	1 13/32″	1 7/16″	1 15/32″	1 1/2″	1 17/32″					1/32″	2 23/64″
5A	3–4–5	1 9/16″	1 19/32″	1 5/8″	1 21/32″	1 11/16″	1 23/32″					1/32″	2 23/64″
6	4–5–6	1 3/4″	1 13/16″	1 7/8″	1 15/16″	2″	2 1/16″	2 1/8″				1/16″	3 5/32″
7	4–5–6	2 3/16″	2 1/4″	2 5/16″	2 3/8″	2 7/16″	2 1/2″					1/16″	3 35/64″
8	4–5–6	2 9/16″	2 5/8″	2 11/16″	2 3/4″	2 13/16″	2 7/8″	2 15/16″	3″	3 1/16″	3 1/8″	1/16″	3 15/16″

EXPANDING MANDRELS WITH INTERCHANGEABLE EXPANSION UNITS

A new development in the Tobler range, this type of Mandrel is ideal for all high-precision machining, turning, grinding, gear-cutting or shaving.

The Mandrel consists of a fixed, tapered central Arbor, on which is mounted one or more interchangeable, cylindrical expansion units, comprised of a cage and slides. Longitudinal movement of the cage along the Arbor projects the slides radially to clamp the workpiece in the bore. At the same time, light pressure of the workpiece against the work-stop is exerted.

A reversal of this principle furnishes an External Concentric Collet Chuck.

Only one mandrel with special units is needed for various diameters and several components can be clamped at one time. Long, short, plain or profiled bores can be accommodated, and each arbor has a total expansion of between 3/8″ and 5/8″ according to size.

HULTO WORK-HOLDING EQUIPMENT FOR JIGS AND FIXTURES

This high-quality range of Jig and Fixture units is a new addition to the work-holding equipment which can be supplied by Alfred Herbert Ltd. The use of superior quality materials and production techniques ensure that each item, large or small, conforms to a very high standard. Jig and Fixture designers can apply any item in the range with perfect confidence in its performance.

MATERIALS

All materials used conform to British Standards Specifications.
Cast-iron to BSS. 1452. Grade 14
Malleable Iron to BSS. 310, Grade B22/14.
All castings are supplied artificially-aged and free from inclusions and porosity. All sections are pre-machined and stress-relieved.

LIMITS AND FITS

Holes and Shafts to BSS. 1916:Part 1:1953
BA Threads to BSS. 93:1951.
Whit. and BSF Threads to BSS. 84:1956.
Unified Threads to BSS. 1580:1949.
Metric Threads to BSS. 1095:1943.
Undercuts and Run-outs to BSS. 1936:1952.

All Plates are finished machined and are flat, parallel and have two edges square—where applicable—to a maximum general tolerance of ·002″ per foot.

All Sections are finished machined and all outside working surfaces are flat, square and parallel to a maximum general tolerance of ·002″ per foot.

PRODUCT FINISH

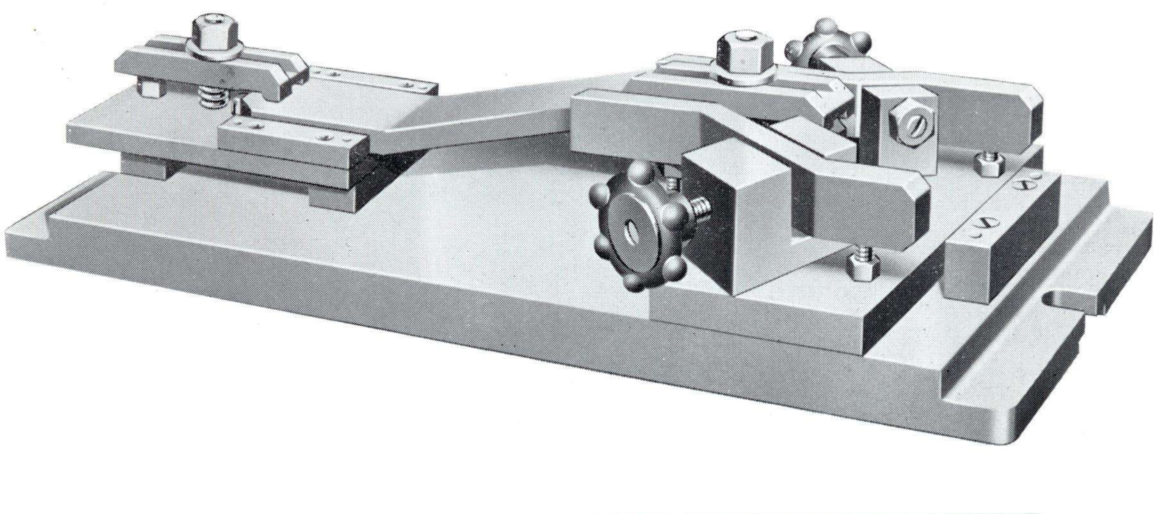
All unmachined casting faces are treated with one coat of primer, one of undercoat, and one final coat of Machine Tool Grey Hard Gloss Enamel Paint.

Steel Plates and Sections are provided with a natural finish.

Small parts have a Satin Chrome, Bright Chrome or Bright Cadmium Finish according to requirements and design specifications.

The 'Hulto' range includes the following items:—
BASE PLATES · SECTIONS · FIXTURE BASES ANGLE BRACKETS · MACHINE FACE PLATES JIG BODIES · JIG PLATES · STUDS · JIG FEET DRILL JIGS · CLAMPS · TEE NUTS · SPRINGS HEEL PINS · NUTS · CAM LEVERS · CAM DISCS WASHERS · CLAMP SCREWS · SWIVEL PADS KNOBS · TORQUE KNOBS · HANDLES · ECCENTRIC PINCH CLAMPS · SWING CLAMPS · YOKES V-LOCATIONS · LOCATIONS · SPRING PLUNGERS INDEX PLUNGERS · JACKS · JACK ASSEMBLIES

Complete details of the entire range of Hulto Equipment will be sent upon request.



A Milling Fixture for a Shifter Fork constructed entirely from standard Hulto parts.

I.S.I. CLAMPS

Alfred Herbert Ltd., are now sole Agents in this country for the extensive and extremely adaptable range of high-quality clamps which are made by Industrial Specialities Incorporated of Warren, Michigan, U.S.A.

These toggle-action clamps are used extensively in America where their application has proved beneficial in many different fields of industry. I.S.I. Clamps facilitate the rapid clamping which is essential to high production.

The combination of high-quality materials and expert design ensures long working life and efficient performance. One salient design feature which significantly influences clamp life is that, in cases of excessive stresses, the pivot pins will shear before the clamp body is broken. The pins can then be replaced, either by a part made by the user or by a standard spare part.

The high pressure ratio which is obtained through the toggle action enables great holding pressures to be exerted, so that even the smallest clamps are quite powerful.

Several of the ranges are supplied with plastoid handles for operational comfort.

Among the range of I.S.I. Clamps which can be supplied are:

PUSH-PULL ACTION CLAMPS
FAST-ACTION GUIDED ARM CLAMPS
REVERSE-ACTION MULTI-CLAMPS
STAINLESS-STEEL MULTI-CLAMPS
MULTI-CLAMPS
MAXI-GRIP TOGGLE PLIER CLAMPS
HIGH HOLDING PRESSURE TOGGLE CLAMPS
HIGH HOLDING PRESSURE VARI-CLAMPS
POWER ROLLER AUTOMATION CLAMPS

Complete details of the entire range of I.S.I. Clamps and dimensioned template drawings for use by draughtsmen will be sent upon request.

Vari-Clamp

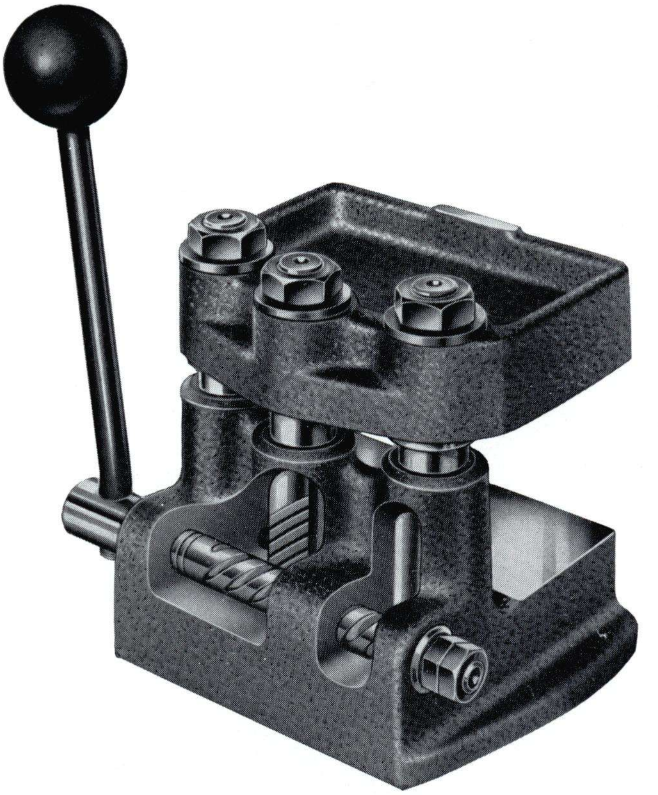
Multi-Clamp

Maxi-Grip Toggle Plier Clamp

PRATT CONE-LOK JIGS

Five Cone-Lok models in eighteen sizes, from 1″ × 1″ to 12″ × 9″ work areas and having interchangeable heads and trays, are available.
Two sets of cones are employed, one at each end of the pinion shaft, the locking action being transmitted by a helical gear and rack.

Double locking ensures complete safety and the rugged construction affords a large safety factor and long life under severe loading. Sealed lubrication system and the protection of working parts minimise wear and maintenance. The jigs are composed of a minimum number of parts, needing less maintenance and not necessitating any skill for rapid assembly or dismantling.



Rear view of Model 1 Cone-Lok Jig, cut away to show locking mechanism.

MODEL No. 1

The most popular Cone-Lok Jig, with three post construction for sturdiness and durability. Round or square trays and heads are available, covering a very wide range of work which can be handled.

Specifications:

Unit No.	Tray Length	Tray Width	Component Depth		Overall Height	Weight
			Max.	Min.		
1422	4″	2″	2·78″	2″	4·82″	10 lbs.
1424	4″	2″	4·78″	4″	6·82″	11½ lbs.
1644	6″	4″	5·4″	4″	8·06″	40 lbs.

MODEL No. 2

Single-post, in-line construction permits greater tool or work clearance without loss of clamping power. Extra square heads and trays are available.

Model 2

Specifications:

Unit No.	Tray Length	Tray Width	Component Depth		Overall Height	Weight
			Max.	Min.		
FC.2111	1″	1″	1·50″	1″	2·44″	1½ lbs.
FC.2222	2·5″	2″	2·78″	2·0″	4·82″	7½ lbs.
FC.2224	2·5″	2″	4·78″	4·0″	6·82″	10 lbs

MODEL No. 4

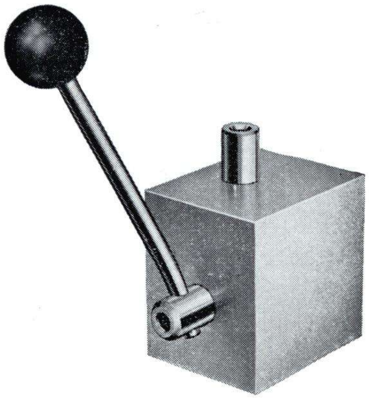
This type has a bridge structure which is necessary when handling large heavy parts such as manifolds or cylinder heads. Extra heads and trays are available to suit the range of five sizes.

Specifications:

Unit No.	*Tray Length*	*Tray Width*	*Component Depth Max.*	*Component Depth Min.*	*Overall Height*	*Weight*
FC.4775	7″	7″	6·75″	5″	11·44″	82 lbs.
FC.4777	7″	7″	8·75″	7″	13·44″	87 lbs.
FC.4999	9″	9″	10·75″	9″	15·44″	127 lbs.
FC.49126	12″	9″	7·75″	6″	12·44″	137 lbs.
FC.49129	12″	9″	10·75″	9″	15·44″	142 lbs.

Model 4

FIXTURE CLAMPS, MODEL No. 5



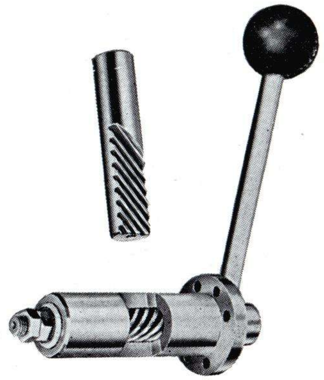
Produced in four sizes, this clamp enables the Cone-Lok principle to be adapted to numerous fixtures, lowering production costs. Suitable mounting holes can be easily machined.
Four sizes are available.

Specifications:

Unit No.	*Body Dimensions*	*Weight*
FC.500	2″ × 2″ × 2″	2 lbs.
FC.501	3·25″ × 3·12″ × 2·62″	7 lbs.
FC.502	4·25″ × 4·5″ × 3·5″	19 lbs.
FC.504	6·5″ × 6·5″ × 4·75″	51 lbs.

CONE-LOK UNITS, MODEL No. 6

These units can be incorporated in fixtures in a similar manner to the clamps described above. The pinion is housed in a flanged bush for placing in the fixture and the rack is positioned to effect the clamping action.

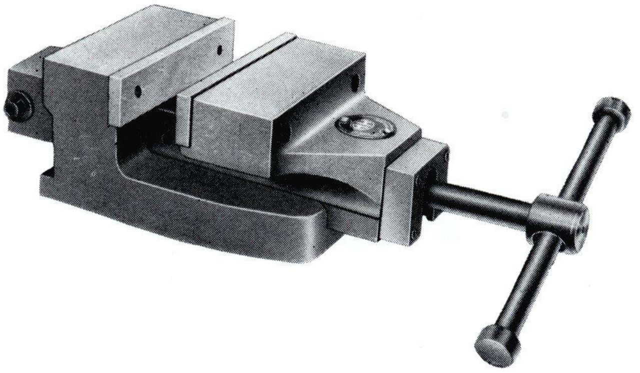


Specifications:

Unit No.	*Diameter of Pinion Bush*	*Rack Diameter*	*Flange Diameter*	*Length of Pinion Assembly*	*Max. Rack Movement*	*Weight*
1	·999″/·998″	·7185″/·7183″	1·75″	4·82″	·78″	1½ lbs.
2	1·374″/1·373″	·9371″/·9368″	2·25″	6·25″	1·04″	4 lbs.
4	2·124″/2·123″	1·5620″/1·5616″	3·12″	9·38″	1·74″	13 lbs.

Further dimensional details of any Cone-Lok Jigs, Clamps or Units may be obtained upon request.

HERBERT QUICK-ACTING MACHINE VICE



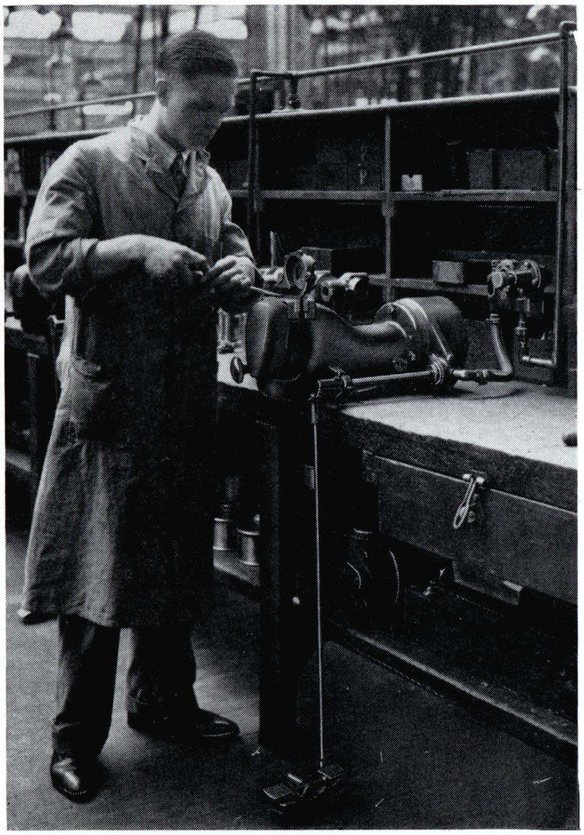
For use on drilling machines, but has proved most useful in applications on milling and planing machines. By lifting the screw out of engagement with the nut, the sliding jaw can be moved instantly to any position, making a great deal of tedious and time-consuming screw operation unnecessary.

The steel vice jaws are renewable, and wherever a compact but powerful unit is required this vice has no superior.

Specifications:

Width of jaws, 6″; Depth of jaws, 1½″; Maximum jaw opening 4″.

HERBERT PATENT AIR-OPERATED VICES



Herbert Air-operated Bench Vice with foot control.

Works on the same principle as HERBERT Air-operated chucks. For bench mounting and having a foot control which obviates the necessity of laying down tools to operate the vice, the adaptation of this vice will save time and exertion on short operation work. The adjustable jaw can be moved instantly to any position within the range of the vice.

Every unit is supplied complete with foot-operated control valve, Monobloc unit complete with lubricator, air filter, reducing valve and pressure gauge.

Specifications:

Width of jaws, 4½″.
Maximum jaw opening, 5½″.
Nett Weight, 128 lbs.

For any further details on the working of this unit, Catalogue Sheet Y1736 will be supplied upon request.

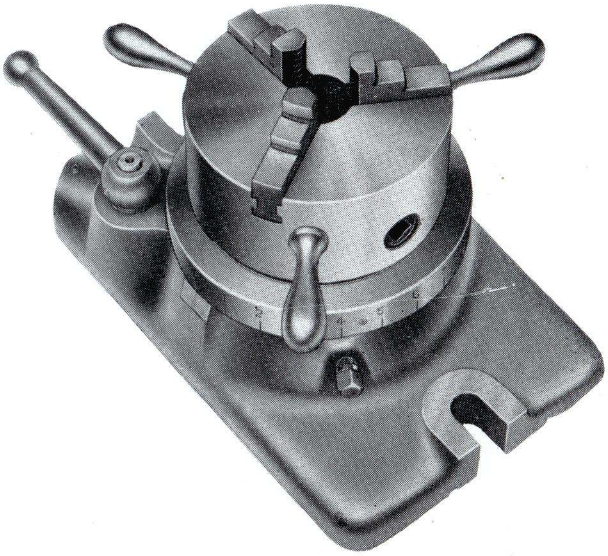
HERBERT VERTICAL DIVIDING CHUCKS

For use on any milling machine of sufficient capacity, the robust and simple structure of these units provides both accuracy and durability.

The division plate is arranged for 2, 3, 4, 6, 8, 12 and 24 divisions and is totally enclosed. Special plates can be supplied to order.

A Pratt No. 58 chuck is used, and "inside" jaws suitable for gripping the shanks of bolts, etc., are supplied as standard. "Outside" jaws can be fitted, if required.

Two types are available, and every unit is guaranteed by the high-quality materials and craftsmanship employed in its manufacture.

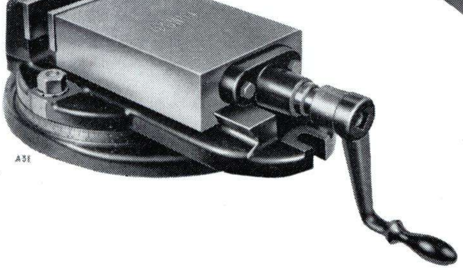


Specifications:

Model	No. 1	No. 2
Diameter of Chuck Body	5″	7½″
Diameter of Centre Hole	1¼″	2″
Length of Base	10¾″	10¾″
Width of Base	7″	7″
Overall Height	6⅝″	7¾″
Weight	37 lbs.	50 lbs.

EDGWICK PARALLEL MACHINE VICES

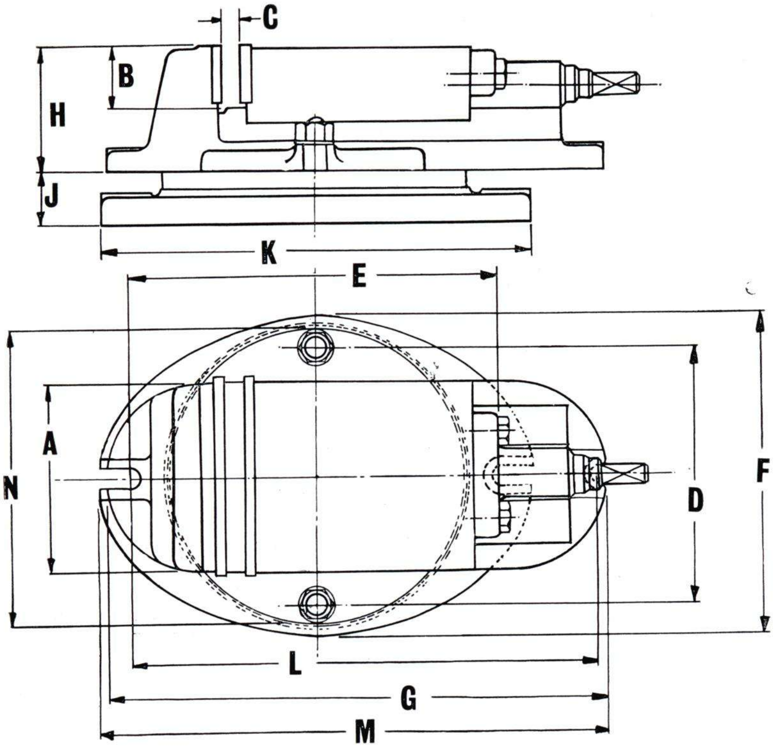
Plain model.



Model with graduated Swivel Base.

Available in two types, with plain base or graduated swivel base, these vices are suitable for precision work on milling, shaping and drilling machines and also for the tool room. The sliding jaw runs on long vee-slides and is fitted with an adjustment strip to compensate for wear. It is impossible for the jaw to lift, tilting the work, and squareness of holding is assured. Jaws are of ground tool steel, and the totally-enclosed, hardened screw runs in a phosphor bronze nut. Construction is robust and compact throughout, eliminating any flexibility.

Each vice is supplied with a crank handle, a detachable hardened tenon for rapid setting, and the plain vice has additional securing lugs at each end.



Specifications:

PLAIN VICES

Vice Size	A	B	C	D	G	H	L	N	Weight
3″	3 3/16″	1 5/8″	2″	4″	9 5/8″	3 1/16″	8 3/4″	4 7/8″	15 lbs.
4″	4 3/16″	1 5/8″	2 3/4″	5″	11 3/8″	3 1/16″	10 1/4″	6 1/8″	25 lbs.
4 1/2″	4 11/16″	1 5/8″	3″	6″	12 3/4″	3 7/16″	11 5/8″	7 3/8″	33 lbs.
6″	6 3/16″	1 7/8″	5″	8″	15 7/8″	3 3/4″	14 5/8″	9 5/8″	64 lbs.
6″	6 3/16″	1 7/8″	6 1/2″	8″	17 3/8″	3 3/4″	16 1/8″	9 5/8″	74 lbs.
8″	8 3/16″	2″	8″	9 5/8″	21 7/8″	3 7/8″	20 3/8″	11 1/2″	120 lbs.
12″	12 1/4″	2 5/8″	12″	14″	28 3/8″	5 1/8″	26 5/8″	15 3/4″	320 lbs.

VICES WITH SWIVEL BASES

Vice Size	A	B	C	E	F	H	J	K	M	Weight
3″	3 3/16″	1 5/8″	2″	6 1/4″	5 3/8″	3 1/16″	1 1/8″	7 1/4″	9 7/8″	22 lbs.
4″	4 3/16″	1 5/8″	2 3/4″	8″	6 3/4″	3 1/16″	1 1/4″	9 1/4″	11 7/8″	35 lbs.
4 1/2″	4 11/16″	1 5/8″	3″	9 1/2″	8 1/8″	3 7/16″	1 1/2″	11 1/16″	13 1/4″	52 lbs.
6″	6 3/16″	1 7/8″	5″	11 3/4″	10 1/8″	3 3/4″	1 5/8″	13 3/4″	16 1/4″	90 lbs.
6″	6 3/16″	1 7/8″	6 1/2″	11 3/4″	10 1/8″	3 3/4″	1 5/8″	13 3/4″	17 3/4″	100 lbs.
8″	8 3/16″	2″	8″	13 3/4″	12 3/4″	3 7/8″	1 3/4″	15 5/8″	22″	157 lbs.
12″	12 1/4″	2 5/8″	12″	—	14 1/4″	5 1/8″	1 7/8″	17″	24 7/8″	317 lbs.

HYLO TWO-SPEED MACHINE VICES

To overcome the problems of finding a suitable pitch for the operating screw of a machine vice, the designers of these vices have developed a system by which a high rate of advance and return is available together with a slow rate for providing the grip. The changeover is entirely automatic and is obtained by a differential mechanism incorporated in the design. The speed of operation is only one-fifth of that for conventional screw vices and any compromise on thread pitches is eliminated.

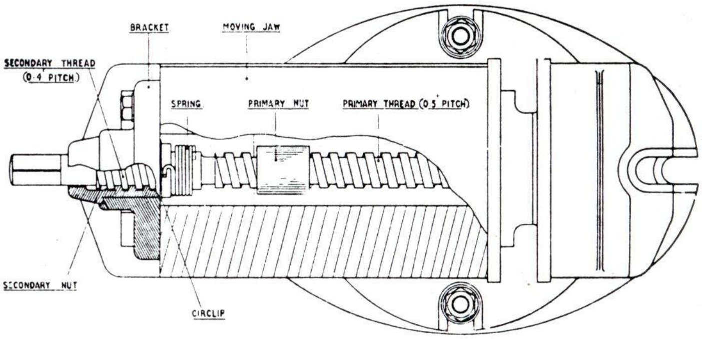
Differential mechanism comprises a common shaft upon which are the primary and secondary threads of 0·5″ and 0·4″ pitch respectively. Fixed in the base casting is the primary nut through which the shaft is threaded, the secondary nut being positioned on the secondary thread so that it abuts the plain portion between the two threads. It is held firmly in this position by a pre-loaded spring. One end of the spring is attached to the secondary nut and the other to the shaft. When the shaft is rotated, it threads through the primary nut, carrying the secondary nut with it. The secondary nut revolves in the bracket bolted to the rear of the moving jaw, but its lateral movement is restricted.

Therefore, when the handle is turned in a clockwise direction, the moving jaw advances at a rate of 0·5″ per revolution. Immediately the jaw contacts the workpiece, the pressure between the flange of the secondary nut and the rear face of the bracket overcomes the energy of the spring, and the nut ceases to rotate in the bracket. Continued rotation of the shaft screws it through both nuts, the difference in pitches producing the slow advance rate of 0·1″ per revolution and giving considerable mechanical advantage.

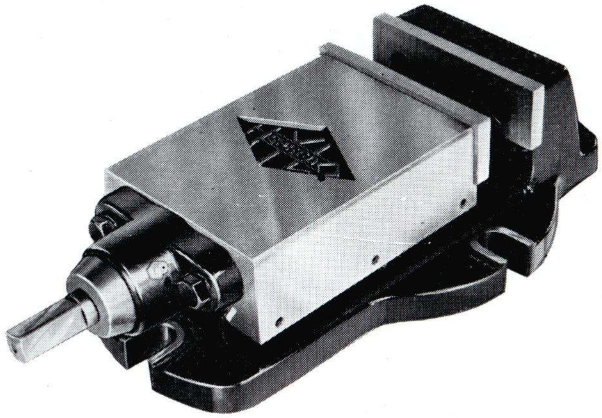
When the vice is opened, after approximately one quarter turn of the handle the rapid rate automatically takes over. Each vice is supplied with a drop-forged steel handle.

All bases are drilled and reamed for the insertion of tenon buttons.

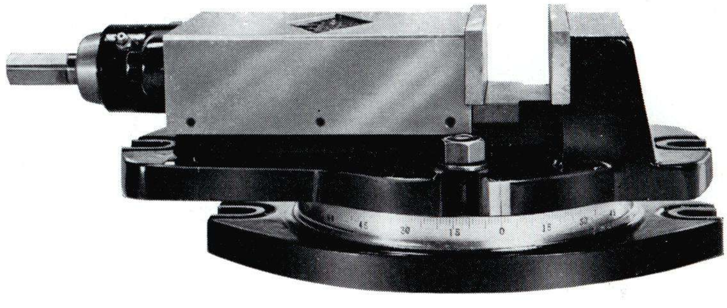
Accurate swivel base can be fitted to any model.



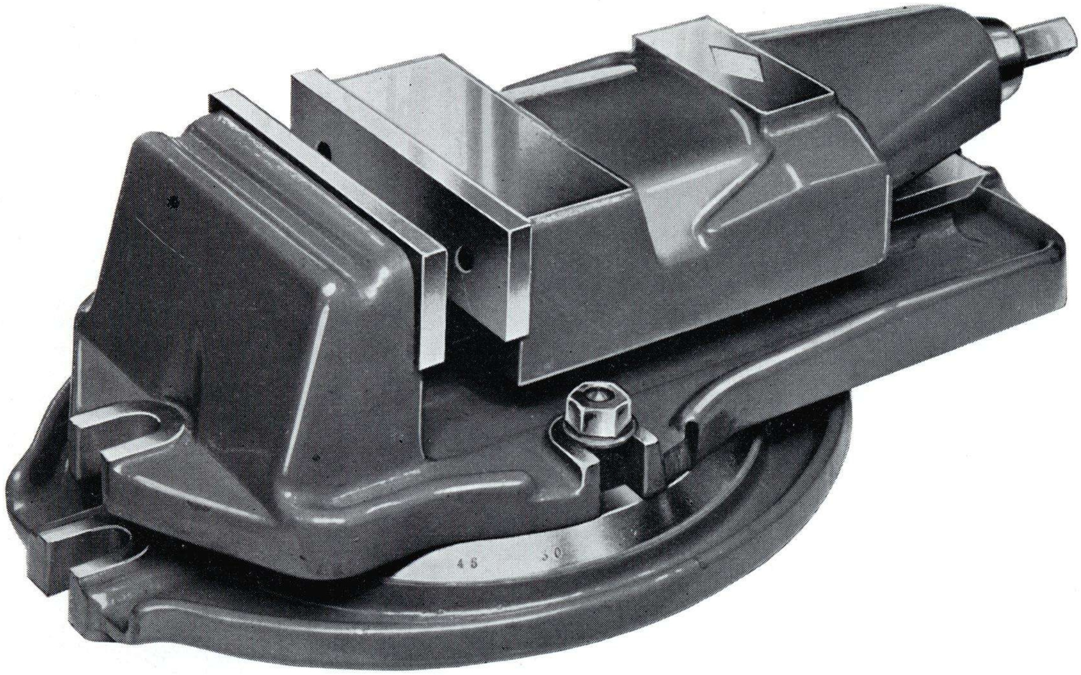
The differential mechanism of a Hylo Two-speed Vice.



Plain Model.



Model with Swivel Base.



Spillway vices provide maximum cleanliness and safety in operation.

SPILLWAY TYPE VICES

This is the latest addition to the range of Hylo Two-Speed Vices and features the provision of spillways and coolant channels, which afford greater convenience to the operator in the clearance of cutting lubricant and swarf. All main castings are of semi-steel, and the nuts of high-tensile manganese bronze. Complete protection against the ingress of injurious material is provided.

Ground faces on the moving jaw provide ideal scribing faces, and the fully graduated swivel plate, fitted if requested, has the graduations on an angular face for ease of reading. The jaws work on fully-adjustable prismatic V slides, which prevent lift or tilt. Two models are available, the 6″ model and the 4½″ model.

Specifications:

Model	4½″	6″
Width of Jaws	4½″	6″
Depth of Jaws	1⅝″	2″
Jaws Open	4″	6″
Height Plain	3 7/16″	4″
Height Swivel	4 15/16″	5⅝″
Length	12¾″	17″
Width	7″	9″

STANDARD MODELS

Four sizes of this Hylo Two-Speed Vice are available. Details are as those of the Spillway models opposite, except that coolant channels are not provided.

Specifications:

Model	3″	4½″	6″	8″
Width of Jaws	3¼″	4¾″	6¼″	8¼″
Depth of Jaws	1⅝″	1⅝″	2″	2 3/16″
Jaws Open	2″	3″	6″	8″
Height Plain	3⅛″	3½″	4⅛″	4 5/16″
Height Swivel	4¼″	5″	5¾″	6 1/16″
Length	9″	12½″	17″	20⅞″
Width	4⅞″	7¼″	9″	11½″

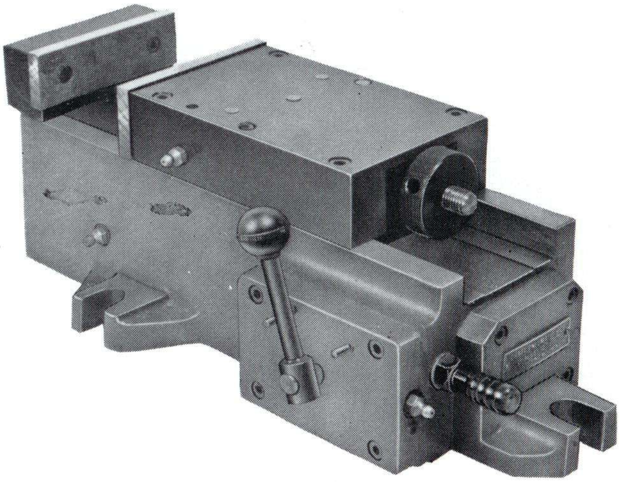
PRATT PNEUMATIC MACHINE VICES

These units remove the hard work from vice tightening, giving tremendous gripping power and rapid operation. First class design and materials, consistent with all Pratt products are used throughout. Construction is robust giving rigidity and long service.

Air equipment is first class, featuring a honed cylinder and self-adjusting piston and piston-rod seals. In the event of air-pressure failure, the vice maintains its grip. Exhaust air can be used for swarf clearance.

Moving parts are hardened and ground where necessary, and although bearing surfaces are ample, friction losses are low. The jaw opening can be rapidly adjusted by means of the knurled wheel.

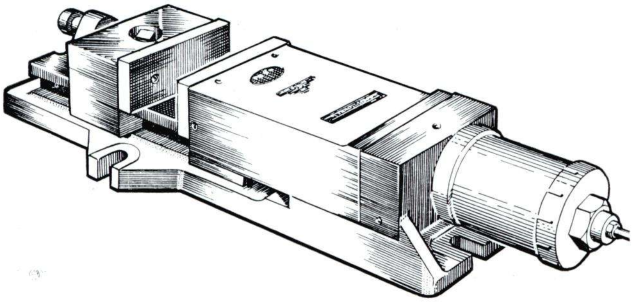
Available in two sizes, this unit will speed up production wherever it is used.



Specifications:

Width of Jaw	*Depth of Jaw*	*Max. Opening*	*Min. Opening*	*Power Motion*	*Gripping Force at 80 p.s.i.*	*Length Overall*	*Width Overall*	*Height Overall*	*Weight*
4″	1 9/16″	2½″	0″	⅛″	4800 lbs.	16½″	6⅞″	5¼″	53 lbs.
4″	1⅞″	4¼″	1¾″	⅛″	7700 lbs.	19½″	9¼″	6⅛″	90 lbs.

ASTCO PNEUMATIC VICES



Hand- or foot-operated, and readily adaptable to numerous applications. The rapid, powerful gripping action and the low clearance promote increased production wherever these vices are applied. Safety devices ensure that in the event of failure in air-line pressure the vice will maintain its grip at full power. Adaptable to heavy-duty milling operations, or repetition operations on drilling, assembly, etc. Total enclosure of the mechanism prevents the ingress of swarf so that long service is assured.

False jaws may be supplied soft to customers' requirements.

Specifications

The release movement of the jaws can be varied from 1/16″ to ½″ to suit customers' specific requirements.

Model	4″	5″	6″
Base Dimensions ...	16¼″ × 6¾″	16¼″ × 6¾″	23¼″ × 9¼″
Overall Height ...	3⅞″	3⅞″	4⅝″
Width of Jaws	4″	5″	6″
Depth of Jaws ...	1⅞″	1⅞″	2⅛″
Max. Std. Jaw Opening	2½″	2½″	4¾″
Release Movement ...	¼″	¼″	5/16″
Pressure between Jaws	1¼ Ton	1¼ Ton	2½ Ton
Weight	45 lbs.	48 lbs.	112 lbs.

Model	7″	8″
Base Dimensions ...	23¼″ × 9¼″	23¼″ × 10¼″
Overall Height ...	4⅝″	4⅝″
Width of Jaws	7″	8″
Depth of Jaws	2⅛″	2⅛″
Max. Std. Jaw Opening...	4¾″	4¾″
Release Movement ...	5/16″	5/16″
Pressure between Jaws	2½ Ton	2½ Ton
Weight	120 lbs.	130 lbs.

In addition to these standard models, vices can be supplied to customers' specific requirements.

ABWOOD MACHINE VICES

Design ensures swarf clearance, and the long bearing surfaces of the V-slides eliminate any tendency to lift or tilt, so that the work is held square. The sliding jaw runs on the V-slides. Jaws are of ground tool-steel. The low height of the vice and the use of high-tensile meehanite castings give great rigidity, strength and stability.

The hardened, square-thread screw runs in a high-tensile, manganese bronze nut.
The accurate machine-divided swivel base can be indexed fully through 360°.

A drop-forged crank handle is supplied with each vice.

Shaper Type 'P' Vice

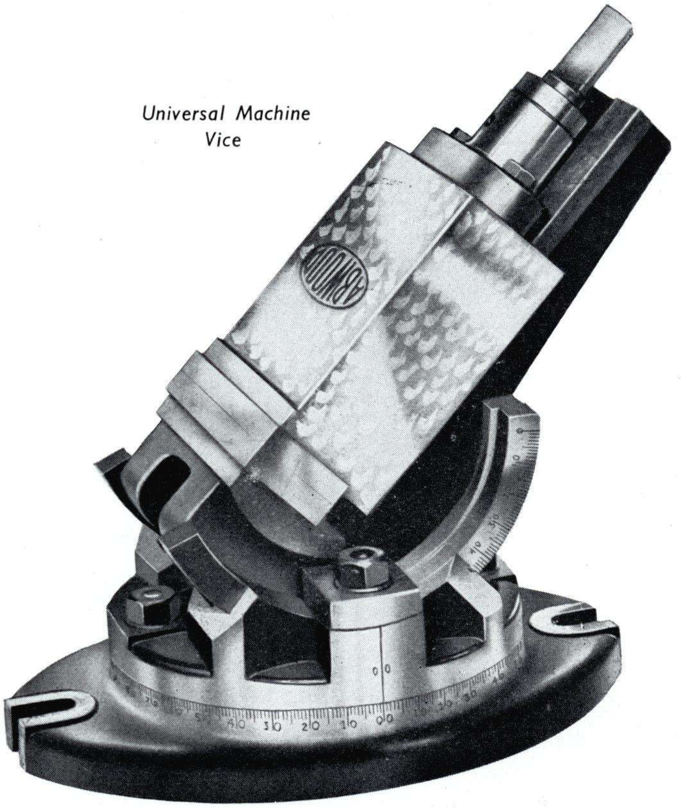
SHAPER TYPE 'P' VICES

For use on shaping machines, but is suitable for all accurate work. The four sizes of this vice cover a very wide range of work, and each has an accurately and fully graduated swivel base.

Specifications:

Size	*Depth of Jaw*	*Capacity between Jaws*	*Overall Height*	*Weight*
6½″	2″	7″	5 13/16″	77 lbs.
8″	2⅛″	9″	6 7/16″	127 lbs.
12″	3″	12″	7 15/16″	300 lbs.
15″	3½″	15″	8 7/16″	398 lbs.

Universal Machine Vice



UNIVERSAL MACHINE VICE

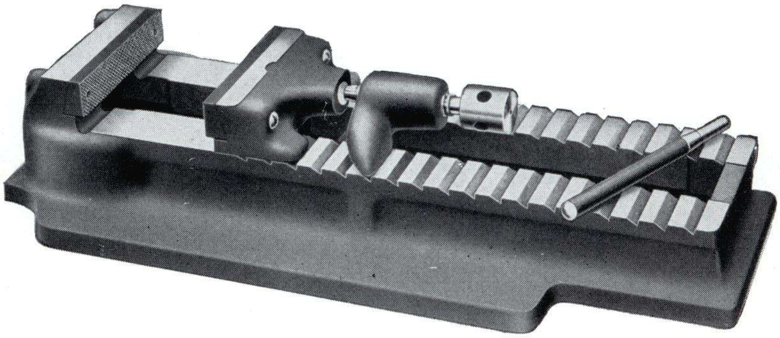
For Jig Boring, Grinding, Milling and Shaping machines, this vice has angular motion in two planes. For angular work, the vice is accurately indexed 0–90°, register being by spot sight and knife edge. The swivel base is graduated a full 360° for horizontal indexing.

Angle setting cannot alter, once the clamps have been locked, and the rigidity of the entire unit eliminates deflection.

Specifications:

Size	*Depth of Jaw*	*Capacity between Jaws*	*Overall Height*	*Weight*
4″	1½″	2¾″	5¾″	38½ lbs.
6″	1¾″	5″	7″	103 lbs.

TAYLOR MACHINE VICE



No. 861

This is a precision unit, having a simple operating system and outstanding versatility. The five sizes are for use on planing, shaping, drilling and milling machines, and although standard vices do not have end flanges, they can be supplied to special order.

The position of the loose jaw is instantly adjustable to the full capacity of the vice, and when tightened forces the work down squarely. Any machining performed on the upper surface of the component is thus true with the under surface.

The cylindrical section of the base of the loose jaw gives the loose jaw compensation for any variation in the parallelism of the work and facilitates the gripping of the work. Work can be cut or drilled below the bottom of the jaw without damaging any part of the vice.

Unless otherwise ordered, all vices are supplied with serrated jaws.

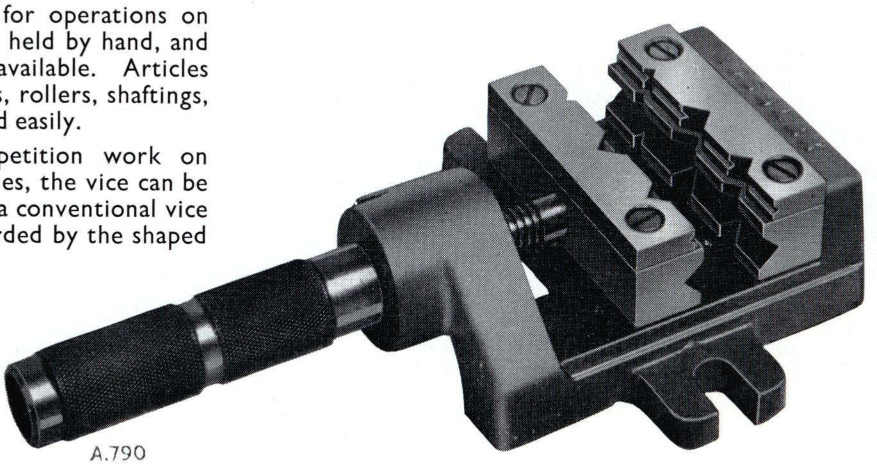
Specifications:

No. of Vice			861		
Width of Jaw	3″	4″	5″	6″	8″
Depth of Jaw	1 3⁄16″	1½″	1¾″	2″	2¼″
Capacity between Jaws	7″	9″	11″	13¼″	18″
Overall Depth	2 15⁄16″	3¼″	3⅞″	4½″	5″
Overall Length	13½″	16½″	19½″	23″	29″
Overall Width	7″	8½″	9½″	10½″	15½″
Approx. Weight	21 lbs.	36 lbs.	62 lbs.	94 lbs.	156 lbs.

UNIVERSAL VICE

Small, compact and indispensable for operations on small components which cannot be held by hand, and where convenient holders are not available. Articles such as small washers, rings, bushes, rollers, shaftings, screws and taper splines can be held easily.

Although ideally suitable for repetition work on shaping, milling and drilling machines, the vice can be fixed to a bench where it serves as a conventional vice with the additional advantages afforded by the shaped jaws.



A.790

Universal Vice

Soundly and accurately constructed, the frame is of the best malleable cast-iron, with screw and jaws of hardened steel. The screw has a square thread.

Jaw width, 3¼″. Length of gap, 1½″.

ACVOKE ADJUSTABLE QUICK-GRIP PRODUCTION VICE

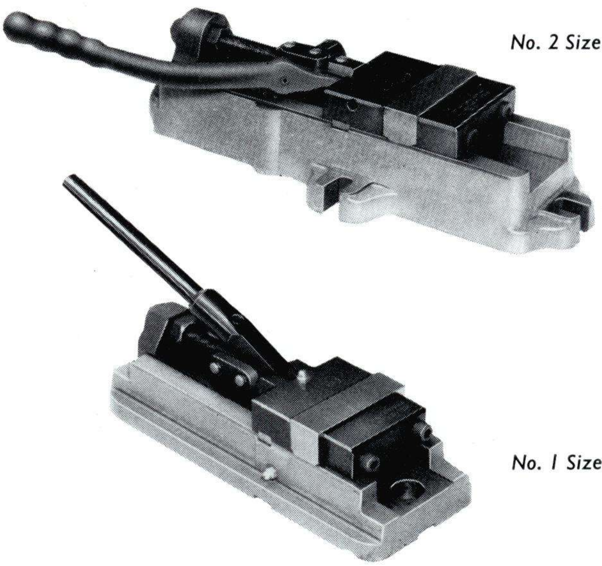
A rapid-operation vice. One simple pull or push of the non-slip handle gives instant rigid grip, the same for every piece, or a full ¾″ opening movement to facilitate easy, quick insertion or removal of the component.

The operating handle is quickly adjustable for either right- or left-hand, horizontal or vertical operation. Size adjustment is by two standard hexagon nuts.

A highly efficient lubrication system and the complete absence of swarf traps obviate time-consuming delays for cleaning. Design ensures that in milling the thrust is taken by the fixed jaw, ensuring rigidity and eliminating vibration.

Tenon slots in the base provide accurate location, and the four slotted feet accommodate ½″ securing bolts. Jaw screw centres are jig-drilled to ensure interchangeability.

Soft, cast-steel, jig-drilled jaw blanks are always available.



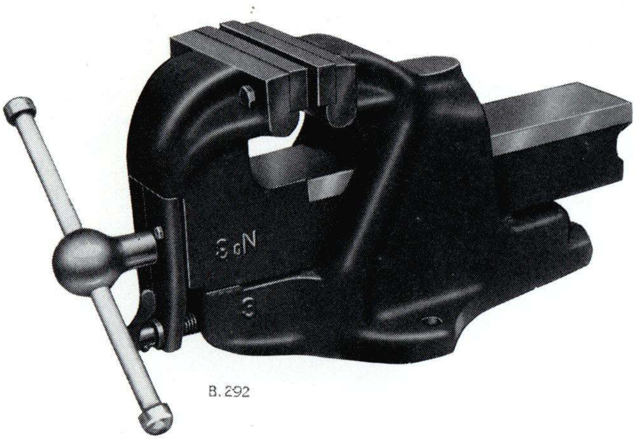
No. 2 Size.

No. 1 Size.

Specifications:

	Max. Grip between Jaws	*Width of Jaws*	*Depth of Jaws*	*Overall Length*	*Overall Width*	*Height from base to bottom of jaws*	*Approx. Weight*
No. 1 Size	1″	2⅞″	15/16″	9¼″	3⅝″	2½″	14 lbs.
No. 2 Size	2″	3½″	1 1/16″	16″	6⅜″	2⅜″	33 lbs.

AJAX ALL-STEEL QUICK RELEASE BENCH VICES



A well-known and proven range of vices, having great strength and giving long and satisfactory service. These vices carry an unqualified guarantee against breakage, and the design and manufacture of the buttress-thread screw and nut withstand the most rigorous wear.

Swivel bases can be supplied.

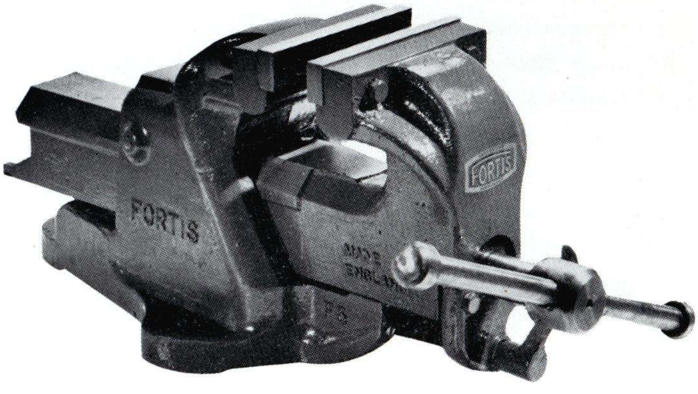
Specifications:

Vice No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Weight*
1	4½″	3″	5″	46 lbs.
2	5¼″	3½″	6″	54 lbs.
3	6″	3¾″	7″	74 lbs.

FORTIS UNBREAKABLE BENCH VICES

All Fortis Vices are guaranteed to be unbreakable. The hardened steel jaws are renewable, and all models have a steel leadscrew.

Swivel bases are available for most models.



Standard Model

STANDARD BENCH VICES

An excellent general-purpose vice, having malleable iron castings. Quick release or fixed nut to customer's choice.

Specifications:

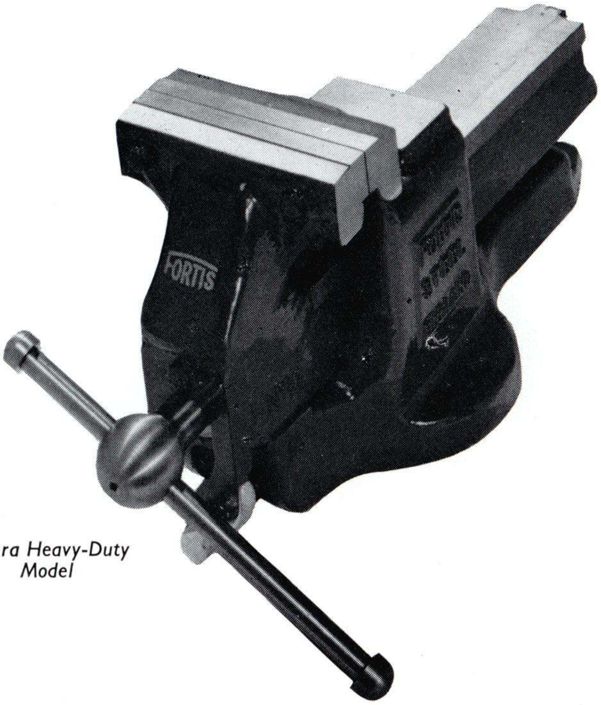
Model No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Approx. Weight*
F4	4″–4⅛″	3″	5″	35 lbs.
F5	5″–5⅛″	3½″	6″	47 lbs.
F6	6″–6⅛″	3¾″	7″	68 lbs.

HEAVY-DUTY BENCH VICES

A robust vice, having steel castings and a quick release mechanism.

Specifications:

Model No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Approx. Weight*
10	4½″	3″	5″	48 lbs.
11	5¼″	3½″	6″	53 lbs.
12	6″	3¾″	7″	72 lbs.
13	7″	4″	8″	86 lbs.



Extra Heavy-Duty Model

EXTRA HEAVY-DUTY BENCH VICES

Exceptionally strong range for heavy industry. Quick release or fixed nut to choice.

Specifications:

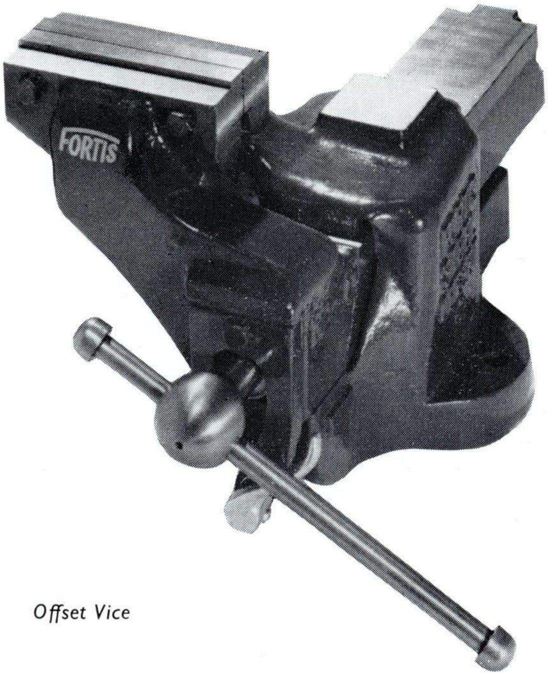
Model No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Approx. Weight*
14	8″	4½″	9″	100 lbs.
15	9″	6″	12″	145 lbs.

OFFSET VICE

Long, vertically-held work can be gripped more easily and securely, there is no fouling on body or ram castings. Quick release action. These vices have steel castings, and can be used as normal bench vices.

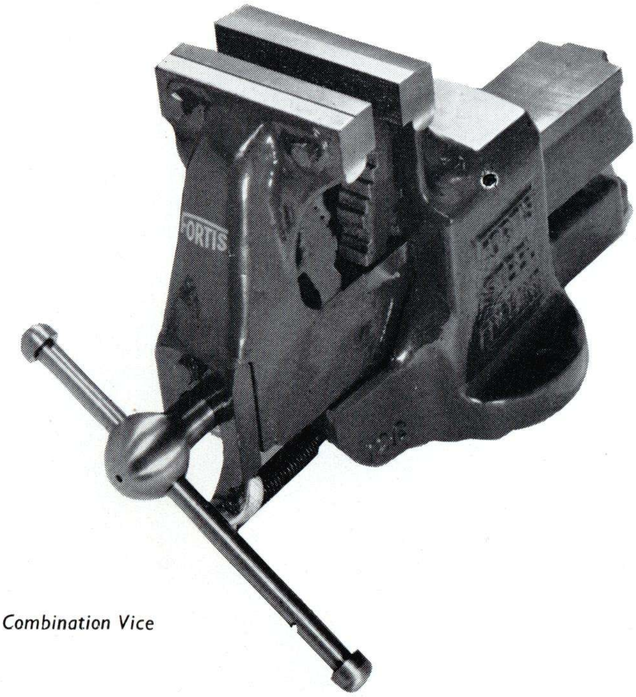
Specifications:

Model No.	*Width of Jaws*	*Jaw Opening*	*Approx. Weight*
10	4½″	5½″	56 lbs.
12	6″	6″	88 lbs.



Offset Vice

COMBINATION VICE



Combination Vice

This is a robust vice, designed to facilitate pipe fitting at right-angles to the normal position. Small serrated jaws are provided to hold tubes and shafts, in addition to the normal vice jaws.

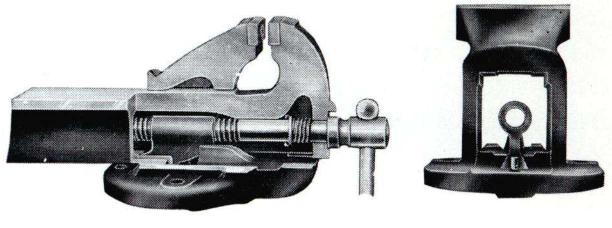
Specification:

Model No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Pipe Jaw Capacity*	*Approx. Weight*
12C	6″	6″	6″	½″–5″	92 lbs.

RECORD BENCH VICES

Highest quality materials and workmanship combine with experience to guarantee every user of Record Vices complete satisfaction. Long service, strength and rigidity are built into all models. Castings are enamelled Record Blue.

The hardened steel jaw plates are renewable and interchangeable.



The Record method of securing the unbreakable nut in the vice body.

MECHANICS' VICES

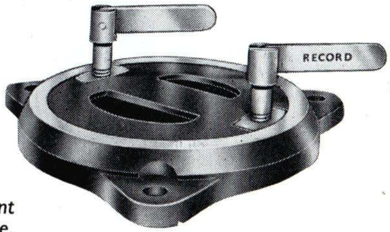
A wide range of the plain-screw type, having an unbreakable nut dovetailed into the body. By securing the nut in this way, perfect alignment of the nut and screw is assured, even under the greatest pressures. These vices can be supplied with swivel bases, or the bases may be supplied separately.

Specifications:

Vice No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Weight*
00	2¼″	1½″	2¼″	5½ lbs.
0	2½″	1⅝″	2½″	8 lbs.
1	3″	1⅞″	3¼″	12 lbs.
2	3½″	2⅜″	4″	21 lbs.
3	4″	2¾″	4¾″	33 lbs.
4	4½″	3″	5½″	42 lbs.
5	5″	3¼″	6½″	54 lbs.
6	6″	3½″	8″	72 lbs.
7	7″	4″	9¼″	84 lbs.
8	8″	4″	9¼″	90 lbs.

Specifications of vices having swivel bases are similar, except that the suffix 'S' is applied to the Vice No., and weights are slightly higher.

Mechanics' Vice.



Record patent swivel base.

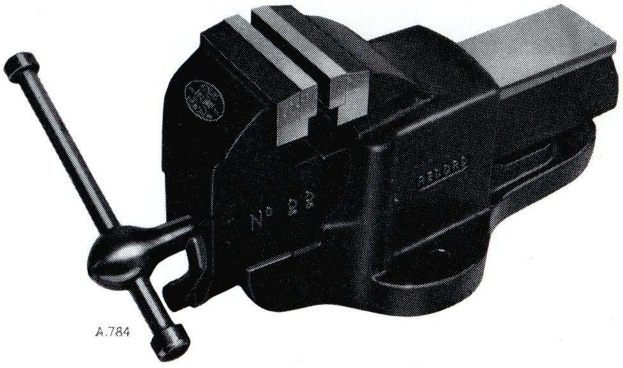
FITTERS' VICES

Combining quick-release action with screw-all-the-way operation, these vices are very popular in machine shops, garages, etc.

Models can be supplied with swivel bases, in which case the suffix 'S' is added to the Vice No.

Specifications:

Vice No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Weight*
21	3¼″	2⅜″	4″	33 lbs.
22	3¾″	3⅛″	5″	47 lbs.
23	4¼″	3⅜″	6″	62 lbs.
24	5¼″	3⅞″	7″	80 lbs.
25	6″	4½″	8″	95 lbs.



Fitters' Vice.

WOODWORKERS' VICES

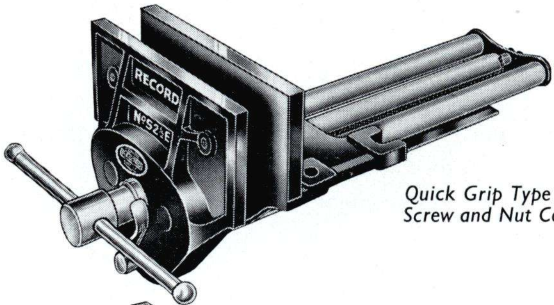
The recognised standard of the woodworking trades, those listed below are the most popular of a very wide range. In addition to strength and durability, this range has refinements for the convenience of the operator, including a Sawdust Excluder Plate and a Nut Guide which facilitates cleaning.

A further refinement to the quick-grip range specified below is a cover which completely encloses the nut and screw mechanism.

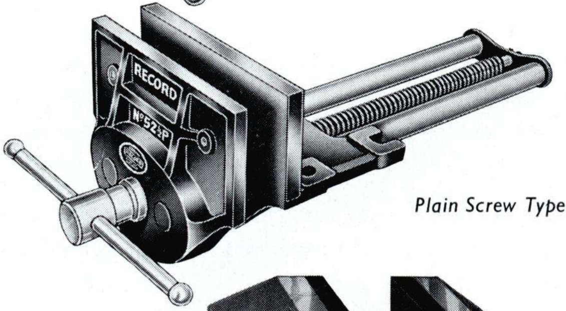
If a Plain Screw Type is required, the number is followed by the letter 'P'. All dimensions are the same.

Specifications:

Vice No.	*Width of Jaws*	*Jaw Opening*	*Weight*
52E	7″	8″	19½ lbs.
52½E	9″	13″	35 lbs.
53E	10½″	15″	38 lbs.



Quick Grip Type with Screw and Nut Cover.

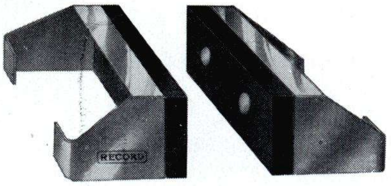


Plain Screw Type.

FIBRE GRIPS FOR VICES

The special fibre used for these grips has a cushion face and is far more durable than lead or copper. Delicate or highly-polished areas can be gripped securely with no fear of damage.

Supplied to suit vices with jaw widths of 2¼″, 2½″ 3″, 3¼″, 3½″, 3¾″, 4″, 4¼″, 4½″, 5″, 5¼″ and 6″.

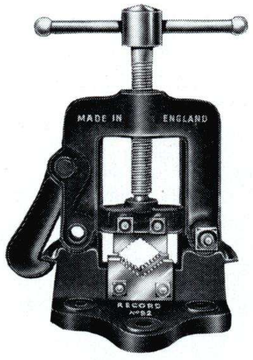


Fibre Grips.

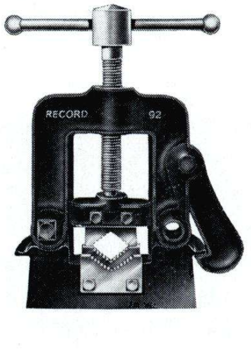
SELF-LOCKING HINGED PIPE VICES

Designed to withstand the heaviest pipe work, these units are guaranteed against breakage. Made from malleable iron and fitted with a steel screw, the frame is reversible for right- or left-hand operation. The jaws are of tool steel, carefully heat-treated and tested. Spare parts can be supplied.

No. 91 is only recommended for electrical conduit and light service.



Back View.



Front View.

Specifications:

Vice No.	*Capacity*	*Weight*
91	⅛″ to 1″	4 lbs.
91½	⅛″ to 1½″	5½ lbs.
92	⅛″ to 2″	8½ lbs.
92½	⅛″ to 2½″	11 lbs.
93½	⅛″ to 3½″	18 lbs.
94½	⅛″ to 4½″	26 lbs.
96	⅛″ to 6″	42 lbs.
98	1″ to 8″	90 lbs.
912	1½″ to 12″	200 lbs.

In addition to the range of Record Vices listed, there are many others for all the various applications to which vices can be adapted. There are Unbreakable Engineers' Vices, normal and very heavy duty. Combination vices, Woodworkers' vices for amateur and professional, Clamps of every description and numerous other holding devices indispensable in the machine shop, garage and all engineering and woodworking shops. Further details will be supplied upon request.

WODEN BENCH VICES

All materials used in the manufacture of these vices are of the finest quality and, combined with excellent design and manufacture, ensure complete satisfaction. In addition to the range of vices summarised below, we supply replacement Jaw Plates and detachable fibre jaws.

MECHANICS' VICE No. 186B

Extremely strong and rigid, this unit is fitted with an unbreakable nut. The slide can be removed for cleaning and oiling without removing the vice from the bench.

Body and slide are of cast-iron and the screw is of high-quality steel. The hardened steel jaw plates are completely interchangeable.

Vices can be supplied with a Swivel Base.

Specifications:

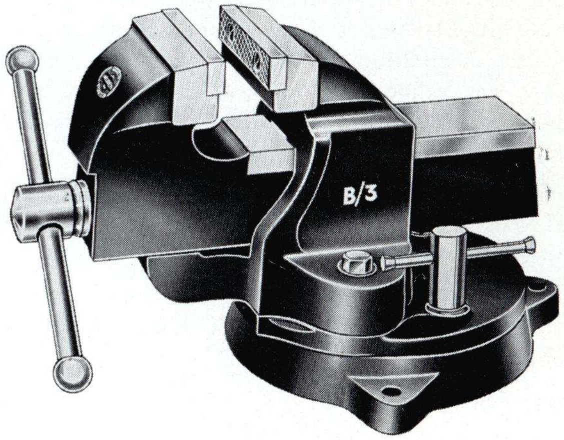
Code No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Weight (Plain)*	*Weight (Swivel)*
B00	2¼″	1⅝″	2¼″	5½ lbs.	10 lbs.
B0	2½″	1¾″	2¾″	8¼ lbs.	13½ lbs.
B1	3″	2″	3¼″	13¾ lbs.	21¼ lbs.
B2	3½″	2¼″	4″	19 lbs.	26½ lbs.
B3	4″	2½″	4¾″	30 lbs.	43 lbs.
B4	4½″	2⅝″	5½″	42 lbs.	57 lbs.
B5	5″	3″	6¼″	52 lbs.	68½ lbs.
B6	6″	3⅜″	7¼″	66 lbs.	87½ lbs.
B7	7″	3⅜″	7¼″	68 lbs.	91 lbs.

When ordering a unit having a Swivel Base, the same code numbers apply except that the suffix 'S' is necessary.

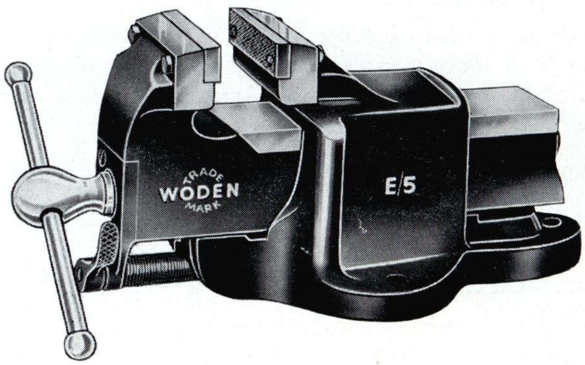
FITTERS' VICE No. 186E

This is the standard Woden vice for industrial purposes, having quick release and instantaneous grip. Solid and substantial design provides strength and service equal to the most arduous conditions.

The heavy, close-grained Grey Iron castings are stove-enamelled Woden Blue. Screw and handle are of steel and the hardened-steel jaw plates are replaceable. Vices can be supplied with a Swivel Base.



No. 186E fitted with a Swivel Base



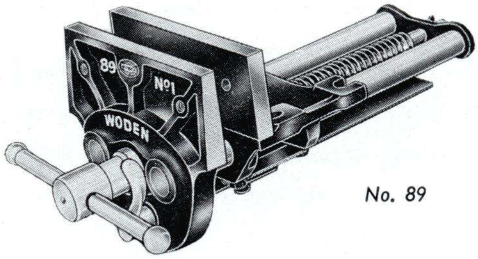
Fitters' Vice with instantaneous grip.

Specifications:

Code No.	*Width of Jaws*	*Depth of Jaws*	*Jaw Opening*	*Weight*
E5	3¼″	2⅜″	4″	34 lbs.
E6	3¾″	3″	5″	49 lbs.
E7	4¼″	3⅜″	6¼″	66 lbs.
E8	5¼″	3¾″	7″	81 lbs.
E8A	6″	4⅛″	8″	100 lbs.
E9	7″	4½″	9″	130 lbs.
E10	8″	6″	10″	204 lbs.

WOODWORKERS' VICE No. 89

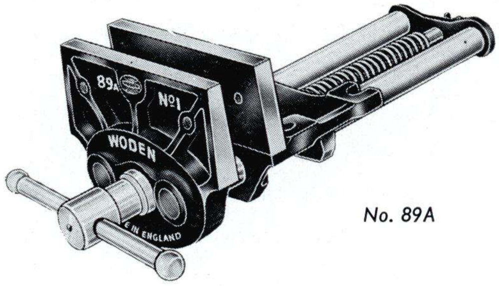
The traditional trigger-operated, quick-release vice employing a half nut and undercut buttress thread. Robust construction to guarantee satisfaction.



No. 89

Specifications:

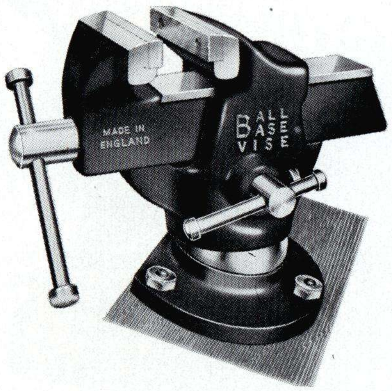
Code No.	*Width of Jaws*	*Jaw Opening*	*Weight*
1	7″	8″	19 lbs.
2	9″	13″	35 lbs.
3	10½″	15″	39 lbs.



No. 89A

Model No. 89A is produced in the same range, and is identical to the above with the exception that it has no quick-release, and is therefore of slightly less weight.

PARKINSON BALL-BASE VICE



Ideal for pattern and die-makers, this unit swivels in any direction upon its spherical base. It can be clamped in any position by the lever at the side.

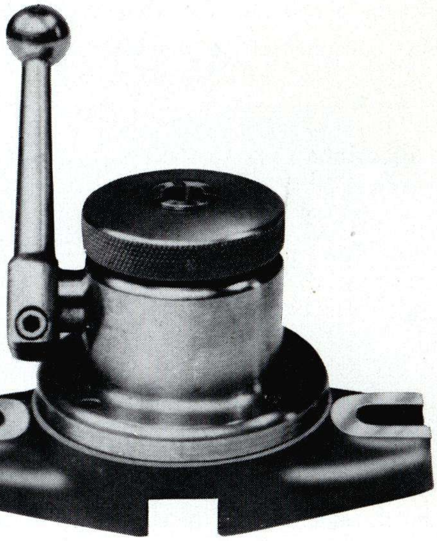
One size only is available, and this has a plain screw action.

Specifications:

Width of Jaws	4″.
Depth of Jaws	1½″.
Opening	3″.
Weight	15½ lbs.

‘QUICKIE’ COLLET FIXTURES

A simple, compact and accurate fixture, holding components up to 9/16″ diameter for such operations as drilling, milling, tapping, threading, reaming, slotting, counter-boring and counter-sinking.



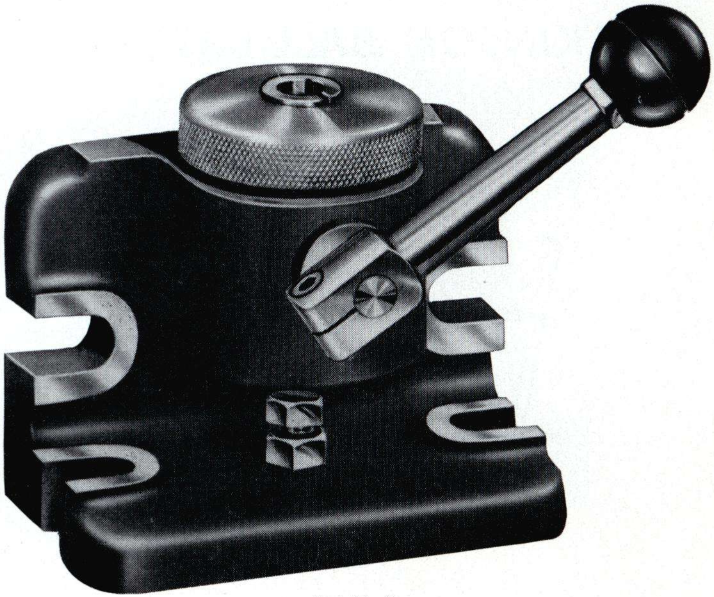
Quickie I

Two types are available, and collets interchangeable between the two. Round collets up to 9/16″ diameter, hexagon collets up to ·440″ A/F and square collets up to 3/8″ are available. Special collets can be made to order.

The collets have a positive cam-operated opening and closing action by the movement of a handle. An adjustable depth stop is provided and there is ample chip clearance.

The ‘Quickie’ Collet Fixture fitted with a plain base can be mounted rapidly in two different positions, at right-angles.

The ‘Quickie’ II Collet Fixture has an angle base, permitting mounting in a vertical or horizontal position, and facilitating the drilling of cross holes in shafts, or milling flats, keyways, etc.



Quickie II

Each model is supplied with base and the choice of one collet. A ‘Quickie’ II set is available complete with a set of 9 collets in a case.

Specifications:

Model	*Base*	*Height*
‘Quickie’	5″ × 3″	2¾″
‘Quickie’ II	4″ × 2½″	3⅝″

G.K.H. ADJUSTABLE PACKINGS

Designed to simplify packing problems, these devices are precision-made from high-quality aluminium alloy, combining light weight and rugged strength. Advantages over the use of scrap metal to pack the free end of a clamp are numerous and obvious. Stable packing is achieved to the requisite height, which haphazard methods can never give.

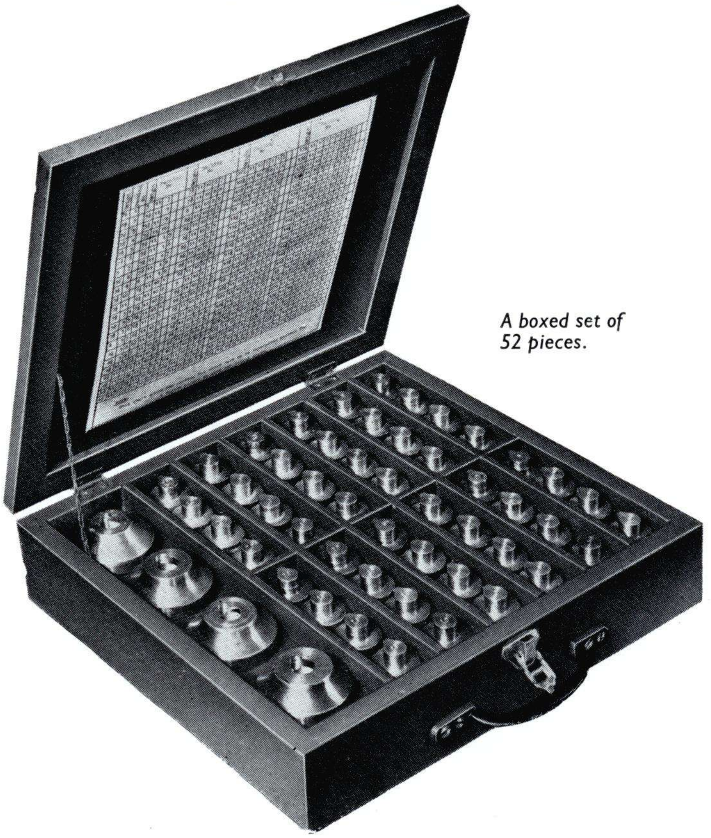
The boxed sets in which these units are supplied contain 52 pieces, including four bases, which are proportioned to give a secure footing, and four special top pieces to give supporting faces for the clamps. The remaining pieces are of eleven different sizes, suitably numbered to facilitate assembly.

A Chart, supplied with each set, gives the numbers of the pieces required to form a column of the desired height, when assembled with base and top piece. In this way, idle time is reduced to a minimum.

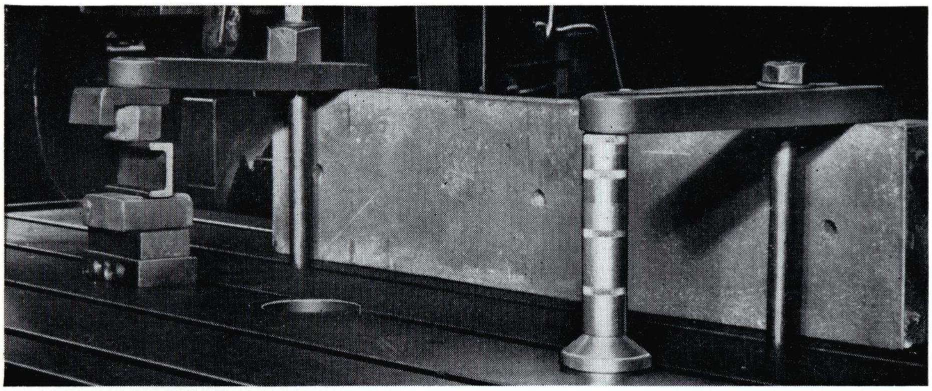
All pieces are interlocked rigidly simply by twisting adjacent pieces in opposite directions. All assembly is by hand, the knurled finger grips on each piece simplifying operation.

Combinations of the intermediate pieces enable any height of column between 2¼″ and 15⅞″ in increments of ⅛″ to be erected. The maximum discrepancy between any required height and its corresponding combination is only $^1\!/_{16}$″.

A boxed set provides sufficient pieces to erect four columns of any height within the range. All parts are interchangeable and replacement parts can be supplied.



A boxed set of 52 pieces.



Packing is made safe and efficient by the G.K.H. method.

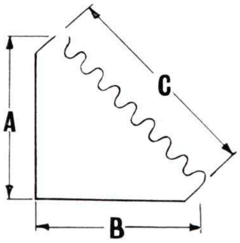
CROWN ADJUSTABLE PACKING BLOCKS

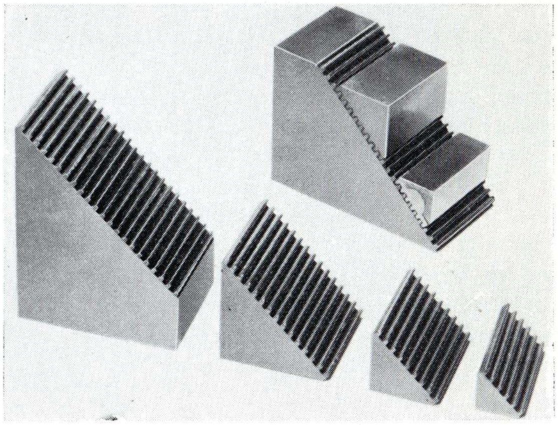
A very swift and advantageous method of packing. Fine pitch serrations enable heights from ¾" to 4" to be made up in increments of ⅛", when a complete set is used.

A set consists of eight blocks, one pair of each of the four sizes listed below. Blocks may be obtained separately.

Specifications:

Type	*A*	*B*	*C*	*Width*
1	¾"	¾"	1"	1¾"
2	1"	1"	1⅜"	,,
3	1¾"	1¾"	2¼"	,,
4	3¼"	2½"	3¼"	,,





RECORD G CRAMPS

TYPE 121

For heavy-duty service, frames are of drop-forged steel, and the steel screw has a unified thread form.

All sizes have a drop handle and a swivel shoe.

Specifications:

Width admitted	2"	3"	4"	6"	8"	10"	12"
Depth of throat (from centre of screw)	1¾"	2⅛"	2⅝"	3¼"	3⅝"	4"	4½"
Dia. of Screw	7/16"	½"	⅝"	⅝"	¾"	¾"	⅞"
Weight (lbs.)	1¼	2	2½	4	6	9	12

TYPE 120

For light woodworking service, the ribbed frame is malleable iron and the steel screw has a square thread.

Specifications:

Width admitted	2"	3"	4"	5"	6"	8"	10"	12"
Weight (lbs.)	¾	1⅛	1½	2¼	2⅜	3¾	6½	8

Type 120 *Type 121*

RECORD STEEL SASH CRAMPS

Strong and durable, the section of the bar is 1¼" × ¼" and the depth of the jaws is 2".

Specifications:

Length of Bar	*Width admitted*	*Weight*
24"	18"	4½ lbs.
30"	24"	5 lbs.
36"	30"	5½ lbs.
42"	36"	6 lbs.
48"	42"	6½ lbs.

Record Sash Cramp

TYPE 133

Bar section is 1½" × 5/16" and depth of jaws is 2¼".

Specifications:

Length of Bar	*Width admitted*	*Weight*
24"	18"	6½ lbs.
30"	24"	7½ lbs.
36"	30"	8 lbs.
42"	36"	9 lbs.
48"	42"	9½ lbs.
54"	48"	10½ lbs.
60"	54"	11 lbs.

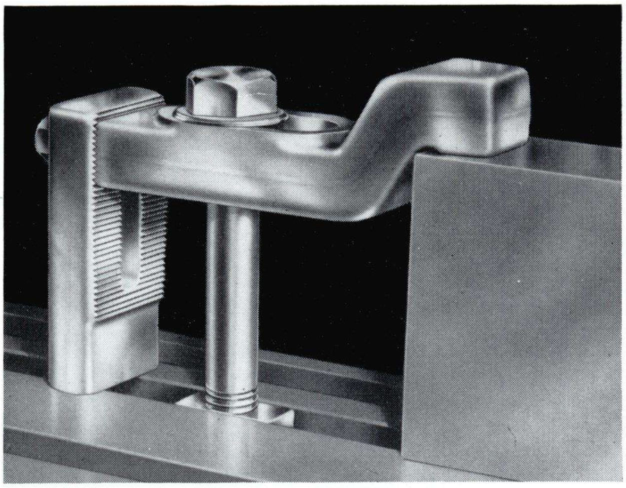
HAMBER CLAMPS

A very useful device, giving strong clamping of components either on faceplates or machine tables. Adjustable up to a height of 6″, each part consists of a horizontal part (H) and a vertical part (U), their mating surfaces being provided with serrations of 1/16″ pitch. This enables height adjustments within the range of the clamp to be made accurately.

A 2″ radius on the base of the upright permits a slight tilting to compensate for any small variations within the 1/16″ pitch of the serrations.

Horizontal parts are available in two styles, either straight or swan-neck. Steel forgings are used, and parts can be supplied individually or in complete sets. A complete set comprises all the parts listed below in pairs, two complete sets providing all the clamping equipment necessary to secure the heaviest of workpieces.

Part No.		*Length*
H.1	Straight	3″
H.2	Swan-neck	4 3/16″
U.1	Upright	1 3/4″
U.2	,,	3″
U.3	,,	4″
U.4	,,	6″



Hamber clamps enable all work to be clamped squarely and evenly

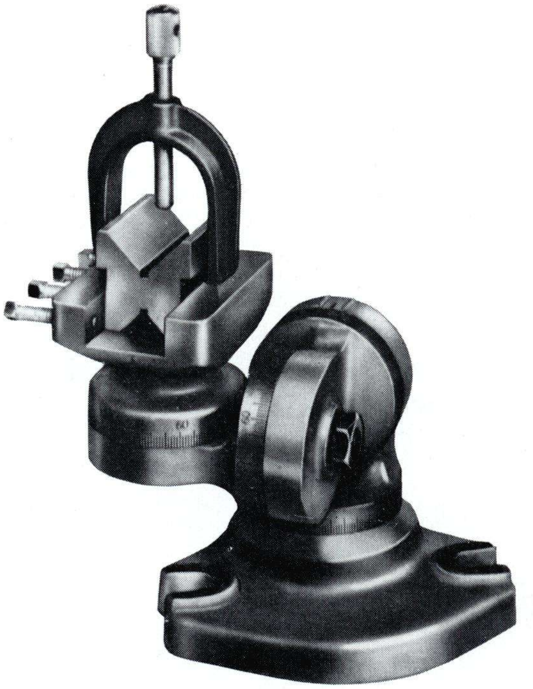
UNIVERSAL GRINDING FIXTURE

This fixture is essential for the grinding and regrinding of turning, boring and shaping tools, especially carbide tools which must have accurate rake angles. Ideal for grinding chip-breakers, form tools, etc., having either negative or positive top rake.

The fixture has four quadrants, enabling any compound angle to be accurately and rapidly set up. Each movement is graduated fully from 0°–360° giving the fixture complete universal adjustment.

In addition to being suitable for fitting to tool and cutter grinders and surface grinders, the fixture is most useful on drilling and milling machines, when small quantities of parts must be machined at awkward angles. Setting is simple and rapid.

Vee block and clamp for round shank work can be supplied as an extra.



Specifications:

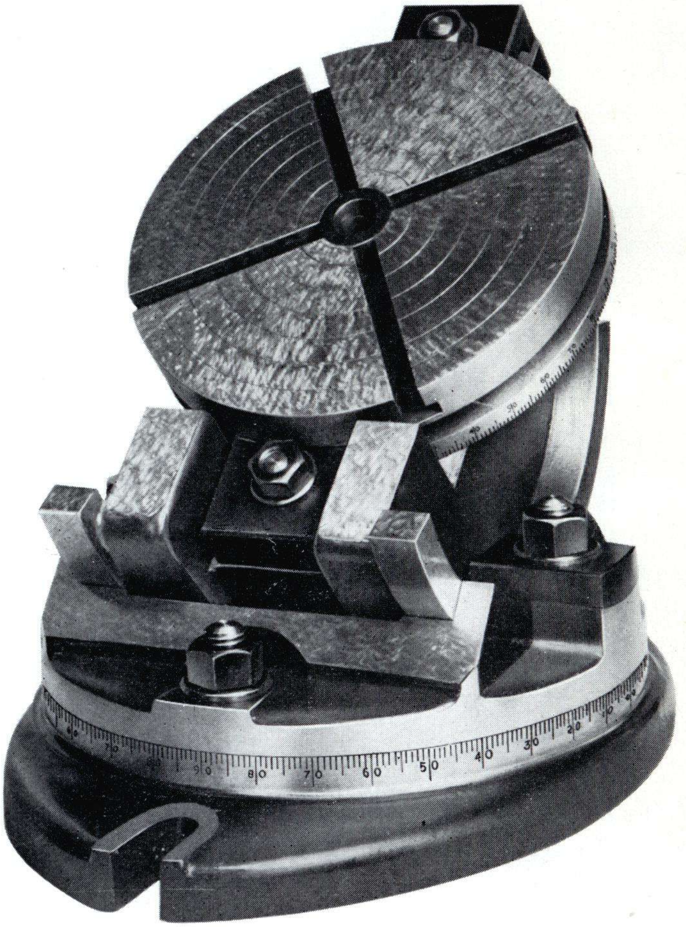
Slot in workholder	3″ long × 1 1/4″ wide × 3/4″ deep
Base dimensions	5 1/2″ × 4″
Bolt slots width	1/2″
Maximum height with screws vertical	8 1/2″
Weight	12 lbs.

ABWOOD UNIVERSAL COMPOUND ANGLE TABLES

Movements of the table are indexed fully through 360° in the horizontal plane and 90° in the vertical, so that any combination of angles may be obtained. Tee-slots are machined from the solid, and a centrally bored hole is fitted with a steel sleeve for receiving spigots.

The table swivels on a ground steel spigot and can be locked in any position by the steel clamps.

The circular table can be removed by loosening and sliding back the securing clamps. Two ground faces on the body provide accurate location for the rectangular table which can be supplied as an alternative. In many instances, these units eliminate the necessity for special jigs and fixtures, making them a sound economic proposition.



The circular and rectangular tables are easily interchangeable.

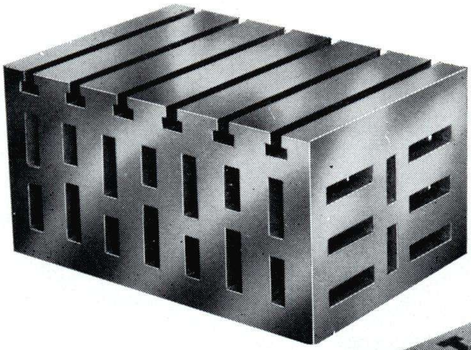
Specifications:

Code Word	*Dia. of Circular Table*	*Size of Rectangular Table*	*Size of Base*	*Overall Height*	*Weight*
COSIX	6″	8″ × 6″	9¼″ × 6¾″	6¼″	37 lbs.
COSEA	8″	10″ × 8″	13¾″ × 10⅛″	7¾″	96 lbs.

If the unit is required complete with Rectangular table, add the suffix ‘R’ to the code word

MACHINE TOOL ACCESSORIES

Accurately machined to commercial limits, the products listed below are of the highest-quality materials and are indispensable in the modern machine shop and toolroom. In addition to the range listed below, special sizes are produced to customers' requirements.



Box Jig.

BOX JIGS

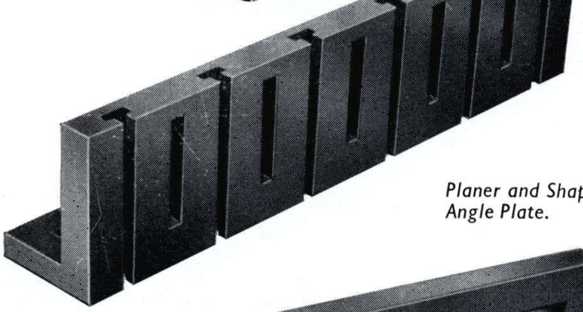
These units, which frequently obviate the manufacture of special jigs, enable holes to be drilled or surfaces to be machined on five different sides of an object at one setting. High-grade cast-iron machined on all faces.

Type M: Tee-slots machined from solid.

Type C: Cast tee-slots, cross slots machined.

Specifications:

Type M	*Type C*	*Size*	*Finish*
B.1M	B.1C	6″ × 5″ × 4½″	Ground
B.2M	B.2C	7½″ × 6″ × 5″	Ground
B.3M	B.3C	9″ × 7″ × 6″	Ground
B.4M	B.4C	12″ × 10″ × 9″	Ground
B.5M	B.5C	18″ × 12″ × 9″	Ground
B.6M	B.6C	24″ × 18″ × 15″	Fine Tool
—	B.7C	30″ × 24″ × 18″	Fine Tool



Planer and Shaper Angle Plate.

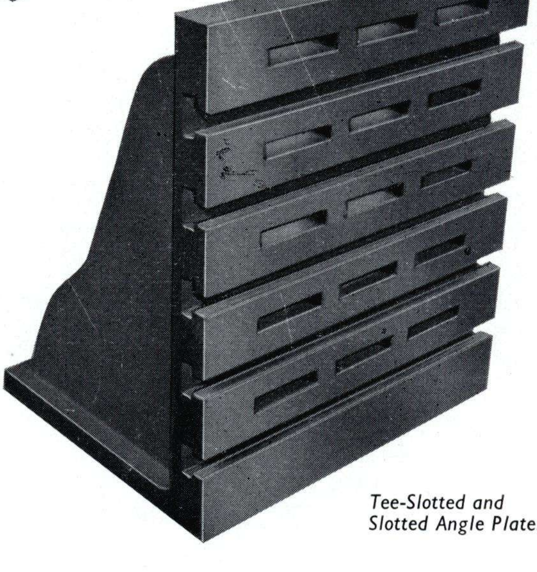
TEE-SLOTTED PLANER AND SHAPER ANGLE PLATES

Extremely useful when machining the edges of long narrow components. One face is slotted, the other slotted and tee-slotted. All units are machined on outside faces, edges and ends, with the exception of Models PA.1, PA.2, and PA.3 which are not machined on the ends.

Plates are of high quality cast-iron, and have a Fine Tool Finish.

Specifications:

Model No.	*Length*		*Height*		*Width*
PA.1	6″	×	3″	×	2½″
PA.2	9″	×	3″	×	2½″
PA.3	12″	×	3½″	×	3″
PA.4	15″	×	3½″	×	3″
PA.5	20″	×	5″	×	3½″
PA.6	24″	×	6″	×	4″
PA.7	30″	×	6″	×	5″
PA.8	30″	×	8″	×	5″



Tee-Slotted and Slotted Angle Plate.

TEE-SLOTTED AND SLOTTED ANGLE PLATES

These plates are designed especially for use on boring machines. Units are of robust proportions in cast-iron, machined on outside faces, edges and ends. The base is slotted and a Fine Tool finish is used.

Specifications:

Model No.	*Length*		*Height*		*Width*
APTS 100B	15″	×	18″	×	12″
APTS 101B	18″	×	24″	×	15″
APTS 102B	18″	×	30″	×	15″

SLOTTED ANGLE PLATES

Two types of these plates are available, Type A and Type B, the latter having side webs. Both types have a Fine Tool Finish.

Type A: machined all over.

Type B: machined on outside faces and edges only.

Specifications:

When ordering, add the letter of the type required to the Model No.

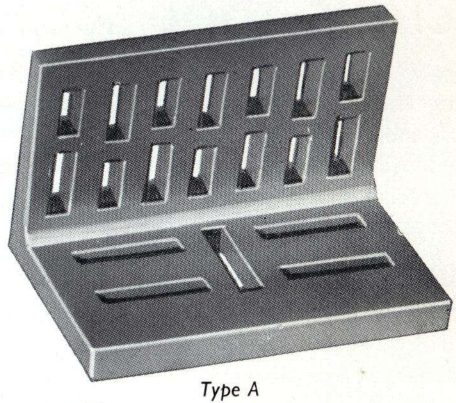
Model No.	*Length*		*Height*		*Width*
7	4″	×	2½″	×	2½″
8	4″	×	3″	×	3″
11	4½″	×	4″	×	3″
13	5″	×	4″	×	4″
13X	5″	×	5″	×	4″
5	6″	×	3″	×	2½″
14	6″	×	4″	×	3″
15	6″	×	5″	×	4½″
16	6″	×	6″	×	6″
17	7″	×	3½″	×	3″
18	7″	×	5½″	×	4½″
19	8″	×	4″	×	3½″
20	8″	×	5½″	×	4½″
21	8″	×	7″	×	7″
22	9″	×	5½″	×	3½″
23	9″	×	9″	×	9″
24	10″	×	5″	×	5″
25	10″	×	6″	×	6″
26	10″	×	8″	×	6″

The above range of sizes applies to both types of plate, but Type B plates are also available in the following models.

10.B	4″ × 3″ × 2¼″
32.B	12″ × 24″ × 15″
42.B	24″ × 15″ × 15″
51.B	18″ × 34″ × 15″
52.B	18″ × 30″ × 15″

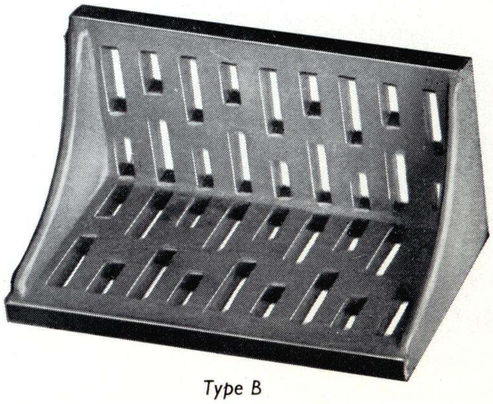
Also available is a range (Type C) with webs and having one edge rounded for use in lathes.

Model Size	*Size*	*Model No.*	*Size*
15.C	6″ × 5″ × 4½″	25.C	10″ × 6″ × 6″
17.C	7″ × 3½″ × 3″	29.C	12″ × 6″ × 4½″
20.C	8″ × 5½″ × 4½″	28.C	12″ × 9″ × 9″
24.C	10″ × 6″ × 5″		



Type A

Model No.	*Length*		*Height*		*Width*
30	11″	×	7″	×	7″
29	12″	×	6″	×	4½″
28	12″	×	9″	×	9″
27	12″	×	12″	×	9″
31	12″	×	12″	×	12″
33	12″	×	18″	×	15″
34	14″	×	9″	×	9″
36	16″	×	9″	×	9″
37	16″	×	12″	×	9″
38	16″	×	12″	×	12″
41	18″	×	12″	×	9″
41X	20″	×	16″	×	10″
43	24″	×	12″	×	12″
44	24″	×	18″	×	12″
45	24″	×	18″	×	18″
48	24″	×	21″	×	18″
53	24″	×	24″	×	24″
49	30″	×	22″	×	12″
50	36″	×	15″	×	15″
47	36″	×	30″	×	15″
54	48″	×	12″	×	12″
55	48″	×	18″	×	12″
56	48″	×	24″	×	12″



Type B

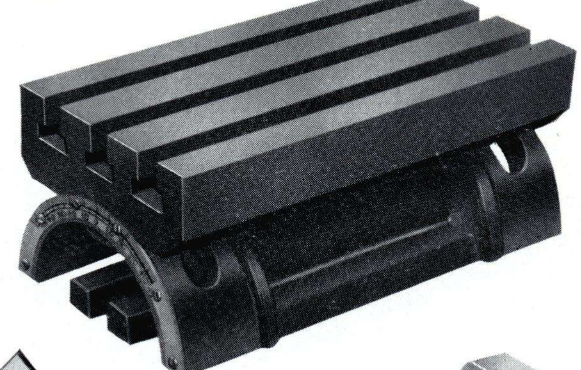
ADJUSTABLE SWIVEL ANGLE PLATES

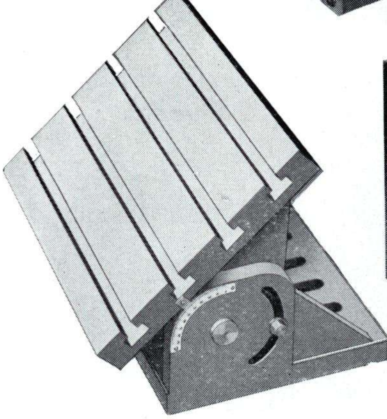
Strong and rigid. The swivel is graduated from 0°–90° to facilitate setting. Two types are available, Type T which has tee-slots machined from solid and Type P which has a plain slotted top, Radial Locking Type. Locking pins are hardened and ground. Please state type required when ordering.

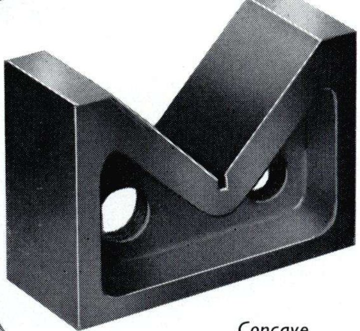
Specifications:

Type T	*Type P*	*Table Size*	*Finish*
SA.1T	SA.1P	6″ × 5″	Ground
SA.2T	SA.2P	8¼″ × 6″	Ground
SA.3T	SA.3P	8¼″ × 8″	Ground
SA.4T	SA.4P	10″ × 8″	Ground
SA.5T	SA.5P	12½″ × 10″	Ground
SA.6T	SA.6P	15″ × 12″	Ground
SA.7T	SA.7P	20″ × 15″	Ground
SA.8T	SA.8P	24″ × 16″	Fine Tool
SA.9T	SA.9P	24″ × 18″	Fine Tool
SA.10T	SA.10P	30″ × 18″	Fine Tool
SA.11T	SA.11P	36″ × 18″	Fine Tool

Tilting Table.







Concave Vee Block.

Adjustable Swivel Angle Plate.

TILTING TABLES

Graduated swivel scales in each direction simplify setting. Tee slots are machined from the solid, and both table and base have a ground finish. On milling applications, use of these tables often eliminates the necessity for angle cutters.

Specifications:

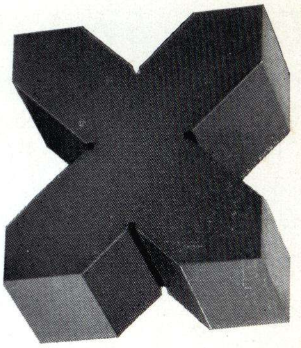
Model	*Swivels*	*Length*		*Width*		*Height*
TT.1	45°	8¼″	×	4″	×	3¼″
TT.2	35°	8″	×	6″	×	3¼″
TT.3	45°	10″	×	5″	×	4¼″
TT.4	35°	10″	×	7½″	×	4¼″
TT.5	45°	12″	×	6″	×	4½″
TT.6	35°	12″	×	9″	×	4½″
TT.7	45°	15″	×	7½″	×	5⅞″
TT.8	35°	15″	×	11¼″	×	5⅞″
TT.9	45°	18″	×	9″	×	6¼″
TT.10	35°	18″	×	13½″	×	6¼″
TT.11	45°	24″	×	12″	×	8″
TT.12	35°	24″	×	18″	×	8″

IMPROVED VEE BLOCKS, CONCAVE SIDES

Accurately machined in pairs, these cast-iron vee blocks have vees of 90°. Vees have a Fine Tool Finish.

Model No.	*Length*		*Height*		*Width*	*Width Top Vee*	*Face Finish*
5A	3″	×	2¼″	×	1½″	1½″	Ground
6	3″	×	2½″	×	1¼″	2″	Ground
7	4″	×	3″	×	1½″	3″	Ground
8	5″	×	3½″	×	1¾″	3¼″	Ground
8A	5″	×	3½″	×	2¼″	3½″	Ground
20	6″	×	3″	×	2″	3¼″	Ground
9	7″	×	4½″	×	2″	5″	Ground
10	7″	×	5″	×	2½″	5″	Ground
19	7¼″	×	6″	×	2″	3½″	Ground
11	8″	×	5″	×	2¼″	6″	Ground
12	9″	×	5¾″	×	2½″	6¼″	Ground
13	11½″	×	7½″	×	2¾″	8″	Ground
18	12″	×	6″	×	4″	7″	Ground
14	13″	×	8¼″	×	3″	10″	Ground
15	15″	×	9½″	×	3½″	12″	Fine Tool
16	18″	×	11½″	×	3½″	15″	Fine Tool
17	24″	×	14″	×	4″	18″	Fine Tool

FOUR WAY VEE BLOCKS

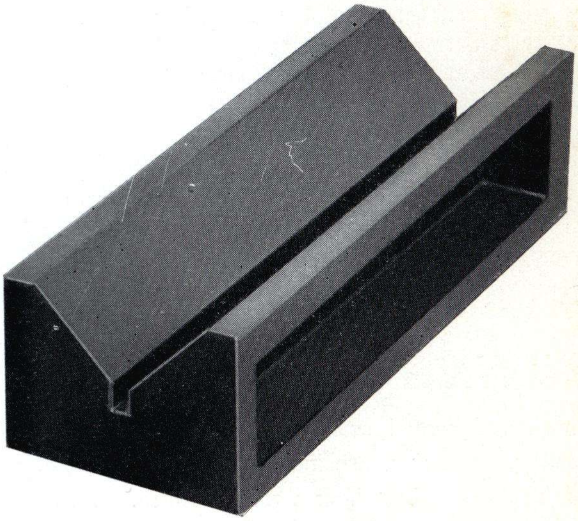


Accurately machined in pairs, these cast-iron blocks have a Fine Tool finish in the vees and ground faces. Vees are of different size.

The same type of block can be obtained in hardened and ground steel.

Model No.	Size
418	3″ × 2½″ × 1¾″
419	4¼″ × 4″ × 3″
420	6″ × 5½″ × 3″

LONG TYPE VEE BLOCKS

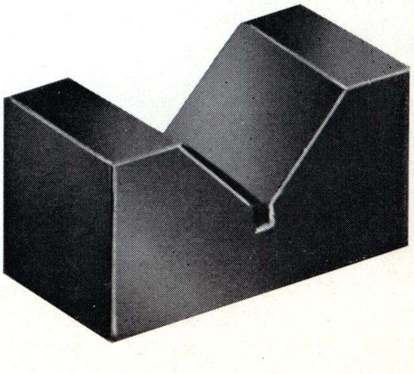


These vees are machined lengthwise and have a Fine Tool finish. All blocks have ground faces, but blocks are not supplied in pairs.

Model No.	Size
V.35	4″ × 1½″ × 1″
V.36	6″ × 2″ × 1½″
V.39	8″ × 3″ × 2″
V.40	11¾″ × 4″ × 3″

SOLID CAST-IRON VEE BLOCKS

No. I TYPE



Accurately machined in pairs, and having a Fine Tool Finish in the vees.

Model No.	Length		Height		Width
1	2″	×	1″	×	1″
2	2½″	×	1¼″	×	1¼″
3	3″	×	1½″	×	1½″
4	4″	×	2″	×	2″
4A	4″	×	2¾″	×	2″
5	6″	×	3″	×	2″
6	6″	×	3″	×	3″
7	8″	×	4″	×	3¼″
11	10″	×	5″	×	3½″

The same type of the above Vee Blocks may be obtained in Hardened and Ground Steel. When ordering these, quote 'H' after the Model No. and size.

Box Parallels, Engineers' Parallels, Adjustable Parallel Packings and numerous other accessories are available.

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